

1000715

Ground Water Management Zone Status Report for Keystone Steel & Wire Co.

Prepared for:

Keystone Steel & Wire Company

IEPA Site No. 1430050001

7000 S.W. Adams Street

Peoria, IL 61641

For Submittal to:

Illinois Environmental Protection Agency

Bureau of Land, Permit Section #33

1021 North Grand Avenue, East

P.O. Box 19276

Springfield, IL 62794-9276

Prepared by:

Earth Tech

5010 Stone Mill Road

Bloomington, Indiana 47408-9320

August 2000

VIA FEDERAL EXPRESS

August 28, 2000

Ms. Joyce L. Munie, P.E.
Illinois Environment Protection Agency
Bureau of Land, Permit Section #33
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9726

RE: **Ground Water Management Zone Status Report for
Keystone Steel & Wire Co., Peoria, Illinois, IEPA Site No. 1430050001**

Dear Ms. Munie:

This letter transmits four copies of the above referenced report on behalf of Keystone Steel & Wire Co.. This report is the response to items 3, 4, and 6 in your July 28, 2000 letter (C-521-M-20) to Keystone. Since the ground water contaminant plume at the Keystone facility has shrank, a formal request for modification of the ground water monitoring system is also included in this status report.

Please contact me at (812) 336-0972 or Mr. Russ Perry of Keystone at (309) 697-7538 if you have any questions regarding this submittal.

Sincerely,

Earth Tech



Robert Aten
Project Manager

Enclosure

Cc: R. Perry



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

RCRA INTERIM STATUS CLOSURE AND POST-CLOSURE CARE PLANS GENERAL FORM LPC-PA18

THIS FORM MUST ACCOMPANY ANY RCRA INTERIM-STATUS CLOSURE AND/OR POST-CLOSURE CARE PLANS OR MODIFICATION REQUEST SUBMITTED TO THE DIVISION OF LAND POLLUTION CONTROL. THE ORIGINAL AND TWO COPIES OF ALL DOCUMENTS SUBMITTED MUST BE PROVIDED.

FACILITY IDENTIFICATION (Information about the facility where the units are located which are addressed in this closure plan submittal)

Name: Keystone Steel & Wire Company County: Peoria
Street Address: 7000 S.W. Adams Street Site # (IEPA): 1430050001
City: Peoria Site No. (USEPA): ILD000714881

OWNER INFORMATION

Name: Keystone Consolidated Industries
Mailing Address: 5430 LBJ Freeway, Suite 1740
Three Lincoln Centre
Dallas, Texas 75240
Contact Name: Ralph End
Contact Title: Vice President & Corporate Counsel
Phone #: (972) 450-4297

OPERATOR INFORMATION

Keystone Steel & Wire Company
7000 S.W. Adams Street
Peoria, Illinois 61641-0002
Robert N. Miller
Manager of Engineering
(309) 697-7527

TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ Original (New) Closure Plan Log No. of Most Recent Agency Approval/Disapproval Letter C-521-M-20
☐ Original (New) Post-Closure Plan
☒ Response to Disapproval letter Date of Most Recent Agency Approval/Disapproval Letter 7/28/00
☒ Modification Request
☐ Additional Information for ___ / ___ / ___ Submittal (Log No. _____ if known)

Does this submittal contain groundwater information. ☒ Yes; ☐ No

(IF YES, PLEASE INCLUDE ONE ADDITIONAL COPY OF SUBMITTAL)

DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted)

Status of Ground Water Management Zone. Response to items 3, 4, and 6 in C-521-M-20
(7/28/00) letter.

LIST OF DOCUMENTS SUBMITTED (identify all documents in this submittal, including the cover letter)

- (1) Ground Water Management Zone Status Report for Keystone Steel & Wire Co.
- (2) Cover letter

UNITS UNDERGOING CLOSURE (please identify what type of units are addressed in the plan, their capacities and whether they are on the RCRA Part A for the facility)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Storage:				
Container (barrel, drum, etc.)	S01			
Tank	S02			
Waste Pile	S03			
Surface Impoundment	S04	<u>3</u>	<u>NA</u>	<u>N</u>

<u>Unit</u>	<u>Unit Code</u>	<u>Number of Units Closing</u>	<u>Capacity</u>	<u>On Part A (Y/N)</u>
<u>Treatment:</u>				
Tank	T01	_____	_____	_____
Surface Impoundment	T02	_____	_____	_____
Incinerator	T03	_____	_____	_____
Other (explain)	T04	_____	_____	_____

<u>Disposal:</u>				
Landfill	D80	_____	_____	_____
Land Application	D81	_____	_____	_____
Surface Impoundment	D83	_____	_____	_____

CERTIFICATION AND SIGNATURE (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126. Any submittal involving engineering plans, specifications and calculations as defined in the Illinois Professional Engineering Practice Act (225 ILCS 325) and 68 Ill. Adm. Code 1380 must be signed and certified by an Illinois licensed professional engineer.)

All closure plans, post-closure plans and modifications must be signed by the person representing the owner/operator designated below or by a duly authorized representative of that person:

1. If the owner/operator is a Corporation - By a principal executive officer of at least the level of vice-president.
2. If the owner/operator is a Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
3. If the owner/operator is a Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. is submitted with this application (a copy of a previously submitted authorization can be used).

CERTIFICATION STATEMENT - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature: _____ (Date) _____

Title: _____

Operator Signature: Robert D. Mill 8-23-00

(Date)

Title: Manager of Engineering

Engineer Signature: _____ (Date) _____
(if necessary)

Engineer Name: _____

Engineer Seal:

Engineer Address: _____

Engineer Phone No.: _____

JM:bjh\97763S.WPD

This Agency is authorized to require this information under Illinois Revised Statutes, 1979 Chapter 111 ½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.



Keystone Consolidated Industries, Inc.

OFFICE COMMUNICATIONS

To: David Cheek

cc: Robert Miller

From: Robert W. Singer *RWS*

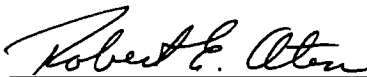
Date: May 19, 2000

Subject: Environmental Compliance Reports

As President and Chief Executive Officer of Keystone Consolidated Industries, Inc., I hereby appoint Robert N. Miller authorized agent of the Company to sign on behalf of the Company any reports or filings required by any state or federal environmental law or regulation.

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information.



Robert E. Aten, LPG 196-000639

Senior Geologist



Ground Water Management Zone Status Report for Keystone Steel & Wire Co., Peoria, Illinois, IEPA Site No. 1430050001

The horizontal extent of the original Ground Water Management Zone (GMZ) was the zero isopach line of Figure 1 (WWES, 1993), which illustrates the vertical thickness of the volatile organic compound (VOC) contaminant plume. The vertical extent of the approved GMZ is defined as the unconsolidated sediments from ground surface to the bedrock surface.

The VOC contaminants are contained mainly in the deep, sand and gravel aquifer located between the underlying bedrock and the overlying Cahokia Alluvium (10-30 ft of fine-grained silt, silty clay, and clayey silt.) The sand and gravel aquifer ranges from zero to over 75 ft in thickness. At the northern end of the GMZ, the sand and gravel is very coarse (boring logs T-19, T-23, and T-25 on Plate 1). In the southern two-thirds of the GMZ, the aquifer is finer grained, predominantly fine to medium sand with occasional gravel layers (boring logs T-10, T-3, T-7, and T-14 on Plate 2).

The original GMZ ground-water monitoring program included 18 base wells (T-2B, T-5A, T-5B, T-5C, T-6C, T-7A, T-8, T-11A, T-14, T-18, T-19A, T-19B, T-21, T-22A, T-22B, T-24, T-25A, and T-25B), 22 investigative wells (W-1D, W-2, W-3D, W-4D, T-1, T-2A, T-3, T-4A, T-4B, T-6A, T-6B, T-7B, T-9, T-10, T-11B, T-11C, T-13B, T-16, T-17, T-19C, T-20, and T-23), and one upgradient well (T-15). The purpose of the base wells is to monitor the spatial extent of the contaminant plume. These wells were located around the perimeter (Wells T-5A, T-5B, T-5C, T-8, T-14, T-18, T-21, T-22A, T-22B, T-24, T-25A, and T-25B) of the GMZ, or above the contaminant plume (Wells T-2B, T-6C, T-7A, T-11A, T-19A, and T-19B) within the GMZ. The purpose of investigative wells is to monitor the changes in VOC contamination during corrective action. The locations of the original base and investigative wells are shown on Figure 1. Tables 1 and 2 list the geologic units in which the wells are screened. Table 1 also lists the total well depths, screened-interval elevations, and screen lengths for all GMZ wells.

As provided for in Section 2.2 of the approved GMZ plan (WWES, 1993), an investigative monitoring well may be reclassified as a base well if it is demonstrated that contaminant levels are below Class I standards for four consecutive quarters. Tables 1 and 2 show the current status of the GMZ ground water monitoring system. Plate 3 is similar to Plate 1, but shows that the contaminant plume does not extend as far to the north as it did in 1993. Because the plume has shrank from the northern part of the facility, wells T-19C and T-23 are no longer classified as investigative wells. Because the northern extent of the plume is now monitored by base wells T-5A, T-5B, T-5C, T-19B, and T-19C, sampling has been suspended for distal base wells T-23 (reclassified), T-25A, T-25B, and T-19A. However, these wells are maintained for water level measurements to document ground water flow directions, and could be put back into service as base wells or investigative wells if the plume were to migrate again to the northern part of the site. Figure 2 shows the locations of current investigative and base wells for the GMZ, as well as the locations of the existing purge wells, proposed purge well, air stripper, and the boundary of the GMZ.

Base well T-24 was destroyed by railroad construction activities after the November 1992 sampling event, and has not been replaced. Because this well never showed VOC contamination and because ground water flow has always been toward the east into the GMZ (e.g., Figure 6), this well is not necessary, as it would be considered an upgradient well.

Well T-14 was destroyed by steel mill activities after the November 1999 sampling event. This well has not shown contamination since installation in February 1990. Since the contaminant plume has shrank, this well is no longer necessary. Furthermore, this well is located in a congested area that is very difficult for a drilling rig to access. Earth Tech recommends that this well be properly abandoned.

Well T-21 was accidentally damaged after the August 1999 sampling event. Photo documentation of this severely damaged well was included in the IEPA November 2, 1999 Comprehensive Monitoring Evaluation report prepared by Mr. Ronald Mehalic of IEPA. A replacement well was installed at the same depth and less than three feet from the destroyed well on November 11, 1999. Because the replacement well was completed less than three feet from the original well, a new geologic boring log was not prepared. A well completion report for well T-21R and the original geologic log for boring T-21 are included with this report. The destroyed well casing was cut off about one foot below ground surface and backfilled with cement/bentonite slurry using a tremie pipe. The tremie pipe was extended to the bottom of the well and slurry was slowly pumped into the well as the tremie pipe was withdrawn. This well abandonment was consistent with the requirements of 77 Ill. Adm. Code Part 920.170(h). A copy of the well-abandonment form is included with this report.

Base wells are sampled semi-annually (May and November). Investigative wells and the background well (i.e., T-15) are sampled quarterly (February, May, August, and November). The water samples from both the base and investigative wells are analyzed for VOCs (Table 2). Both the influent and effluent water at the air stripper are sampled quarterly.

The configuration of the contaminant plume as of the May 2000 sampling event (Figures 3 through 5) is nearly identical to previous events, and is controlled completely within the GMZ. In general contaminant concentrations continue to decrease, particularly near the margin of the contaminant plume. A new VOC (1,4-Dioxane) was added to the parameter list during the May quarterly event as required by the IEPA. This compound was not detected in any of the well samples.

Request For Modification of Original GMZ Monitoring System

Because the contaminant plume is no longer present in the northern part of the Keystone facility and because the ground water flow is towards the center of the GMZ, Keystone requests that the following modifications to the original GMZ ground water monitoring system be approved.

- 1) Base wells (Figure 2) to be sampled semiannually are T-2B, T-5A, T-5B, T-5C, T-6C, T-7A, T-8, T-11A, T-18, T-19B, T-19C, T-21R, T-22A, and T-22B.
- 2) Investigative wells (Figure 2) to be sampled quarterly are W-1D, W-2, W-3D, W-4D, T-1, T-2A, T-3, T-4A, T-4B, T-6A, T-6B, T-7B, T-9, T-10, T-11B, T-11C, T-16, T-17, and T-20.
- 3) Monitoring well T-14 will be abandoned consistent with 77 Ill. Adm. Code Part 920.170(h).

- 4) Former investigative and base wells T-19A, T-23, T-25A, and T-25B be maintained for quarterly ground water level measurements, and if the contaminant plume migrates to the north, that these wells be reinstated as base or investigative wells, as appropriate.

References

Earth Tech, Lake Engineering, and Keystone, 1997, Closure Plan Modification Request for the South Ditch, Lower South Ditch, and South Borrow Area Waste Pile using 35 Il Admin. Code 742(TACO).

WWES, 1992, Ground Water Remediation Program for Keystone Steel & Wire Company, Bartonville, Illinois, June 15, 1992, WW Engineering & Science.

WWES, 1993, Proposed Ground Water Management Zone for Keystone Steel & Wire Company, Bartonville, Illinois, July 16, 1993, WW Engineering & Science.

Keystone Steel & Wire Co.
Peoria, IL
IEPA Site No. 1430050001

TABLE 1

Status of the Monitoring Wells in the Approved Ground Water Management Zone

Well	Status	Total Depth - ft	Screened Interval - ft amsl	Screen Length - ft	Geologic Unit	Well	Status	Total Depth - ft	Screened Interval - ft amsl	Screen Length - ft	Geologic Unit
<u>Investigative Wells</u>						<u>Base Wells</u>					
W-1D	I - North	50.28	400.60 - 395.82	4.78	OUT: sd	T-2B	B	66.90	385.70 - 380.70	5.00	OUT: slt cl
W-2	I - North	12.24	441.36 - 436.36	5.00	ALU: slt	T-5A	B	33.16	417.74 - 412.74	5.00	OUT: sd
W-3D	I - Mid Mill	50.34	401.34 - 396.56	4.78	OUT: sd, gvl	T-5B	B	66.25	384.65 - 379.65	5.00	OUT: sd
W-4D	I - South	50.29	402.09 - 397.31	4.78	OUT: sd, gvl	T-5C	B	82.84	367.87 - 363.16	4.71	OUT: sd, gvl
T-1	I	49.70	406.13 - 401.40	4.73	OUT: sd, gvl	T-6C	B	55.16	399.28 - 394.54	4.74	OUT: sd, slt cl
T-2A	I	44.26	408.26 - 403.54	4.72	OUT: sd, gvl	T-7A	B	18.18	432.65 - 427.92	4.73	ALU: sd, slt cl
T-3	I	60.70	392.12 - 387.40	4.72	OUT: sd, gvl	T-8	B	31.63	421.79 - 417.07	4.72	ALU: sd, gvl, slt cl
T-4A	I	27.24	424.38 - 419.66	4.72	OUT: sd, slt cl	T-11A	B	40.98	412.04 - 407.32	4.72	OUT: sd, gvl
T-4B	I	79.30	377.32 - 367.60	9.72	OUT: sd	T-14	B, DA	102.04	352.64 - 347.86	4.78	OUT: sd, gvl
T-6A	I	19.63	434.41 - 429.47	4.94	ALU: slt cl	T-18	B	32.02	433.66 - 429.00	4.66	ALU: slt, cl
T-6B	I	34.94	419.26 - 414.26	5.00	OUT: sd	T-19A	B, NS	11.84	439.66 - 434.98	4.68	ALU: gvl, slt lm
T-7B	I	81.75	369.25 - 364.25	5.00	OUT: sd	T-19B	B	39.83	411.86 - 407.19	4.67	OUT: sd, gvl
T-9	I	35.47	426.05 - 421.33	4.72	OUT: sd, gvl	T-19C	RTB	70.43	381.26 - 376.27	4.99	OUT: sd, gvl
T-10	I	40.62	418.31 - 413.58	4.73	OUT: sd, gvl	T-21R	B, DR	17.85	453.88 - 449.23	4.65	OUT: slt, cl
T-11B	I	82.66	370.78 - 366.04	4.74	OUT: sd, slt cl	T-22A	B	68.56	387.24 - 376.84	10.40	OUT: sd, slt
T-11C	I	99.21	353.91 - 349.19	4.72	OUT: slt cl, sd	T-22B	B	119.29	336.44 - 326.08	10.36	OUT: sd
T-13B	I	34.03	432.79 - 428.07	4.72	OUT: cl, sd	T-23	RTB, NS	87.59	371.62 - 361.61	10.01	OUT: sd
T-16	I	41.96	411.10 - 406.04	5.06	OUT: sd, gvl	T-24	B, DA	38.99	427.21 - 416.87	10.34	OUT: lm, sd
T-17	I	41.90	422.42 - 417.75	4.67	OUT: sd	T-25A	B, NS	39.58	415.51 - 410.52	4.99	OUT: sd, gvl
T-20	I	47.44	411.31 - 406.64	4.67	OUT: sd, gvl	T-25B	B, NS	94.23	360.89 - 355.77	5.12	OUT: sd
						<u>Background Well</u>					
						T-15	U	20.25	437.45 - 432.45	5.00	OUT: slt, cl

Status Codes:

B = base well
I = investigative well; where applicable, hazardous waste management unit originally monitored indicated as North, Mid Mill, or South Ditch
RTB = reclassified from investigative to base well status
U = upgradient
DA = damaged, abandoned
DR = damaged, replaced
NS = well no longer sampled

Geologic Unit:

sd = sand
gvl = gravel
slt = silt
cl = clay
lm = loam
ALU = shallow, fine-grained, alluvial unit
OUT = deep, coarse-grained, outwash unit

Notes:

Wells T-19C and T-23 reclassified from investigative to base well status after 8/95 event
Wells T-25A and T-25B last sampled during 5/95 event
Abandoned wells: T-24 (destroyed after 11/92 event); T-14 (destroyed after 11/99 event)
Damaged well T-21 replaced after 5/99 event
T-23 last sampled during 11/95 event

TABLE 2

Scheduled Sampling Events for Ground Water Management Zone

Well	Status	Sampling Frequency	Geologic Unit	Analytical Parameters	Well	Status	Sampling Frequency	Geologic Unit	Analytical Parameters
<u>Investigative Wells</u>					<u>Base Wells</u>				
W-1D	I	Q	OUT: sd	VOCs	T-2B	B	S	OUT: slt cl	VOCs
W-2	I	Q	ALU: slt	VOCs	T-5A	B	S	OUT: sd	VOCs
W-3D	I	Q	OUT: sd, gvl	VOCs	T-5B	B	S	OUT: sd	VOCs
W-4D	I	Q	OUT: sd, gvl	VOCs	T-5C	B	S	OUT: sd, gvl	VOCs
T-1	I	Q	OUT: sd, gvl	VOCs	T-6C	B	S	OUT: sd, slt cl	VOCs
T-2A	I	Q	OUT: sd, gvl	VOCs	T-7A	B	S	ALU: sd, slt cl	VOCs
T-3	I	Q	OUT: sd, gvl	VOCs	T-8	B	S	ALU: sd, gvl, slt cl	VOCs
T-4A	I	Q	OUT: sd, slt cl	VOCs	T-11A	B	S	OUT: sd, gvl	VOCs
T-4B	I	Q	OUT: sd	VOCs	T-14	B, DA	---	OUT: sd, gvl	VOCs
T-6A	I	Q	ALU: slt cl	VOCs	T-18	B	S	ALU: slt, cl	VOCs
T-6B	I	Q	OUT: sd	VOCs	T-19A	B, NS	---	ALU: gvl, slt lm	VOCs
T-7B	I	Q	OUT: sd	VOCs	T-19B	B	S	OUT: sd, gvl	VOCs
T-9	I	Q	OUT: sd, gvl	VOCs	T-19C	RTB	S	OUT: sd, gvl	VOCs
T-10	I	Q	OUT: sd, gvl	VOCs	T-21R	B, DR	S	OUT: slt, cl	VOCs
T-11B	I	Q	OUT: sd, slt cl	VOCs	T-22A	B	S	OUT: sd, slt cl	VOCs
T-11C	I	Q	OUT: slt cl, sd	VOCs	T-22B	B	S	OUT: sd	VOCs
T-13B	I	Q	OUT: cl, sd	VOCs	T-23	RTB, NS	---	OUT: sd	VOCs
T-16	I	Q	OUT: sd, gvl	VOCs	T-24	B, DA	---	OUT: lm, sd	VOCs
T-17	I	Q	OUT: sd	VOCs	T-25A	B, NS	---	OUT: sd, gvl	VOCs
T-20	I	Q	OUT: sd, gvl	VOCs	T-25B	B, NS	---	OUT: sd	VOCs
					<u>Background Well</u>				
					T-15	U	Q	OUT: slt, cl	VOCs

Status Codes:

B = base well
I = investigative well
RTB = reclassified from investigative to base well status
U = upgradient
DA = damaged, abandoned
DR = damaged, replaced
NS = well no longer sampled

Notes:

Wells T-19C and T-23 reclassified from investigative to base well status after 8/95 event
Wells T25A and B last sampled during 5/95 event
Abandoned wells: T-24 (destroyed after 11/92 event); T-14 (destroyed after 11/99 event)
Damaged well T-21 replaced after 5/99 event
T-23 last sampled during 11/95 event

Geologic Unit:

sd = sand
gvl = gravel
slt = silt
cl = clay
lm = loam
ALU = shallow, fine-grained, alluvial unit
OUT = deep, coarse-grained, outwash unit

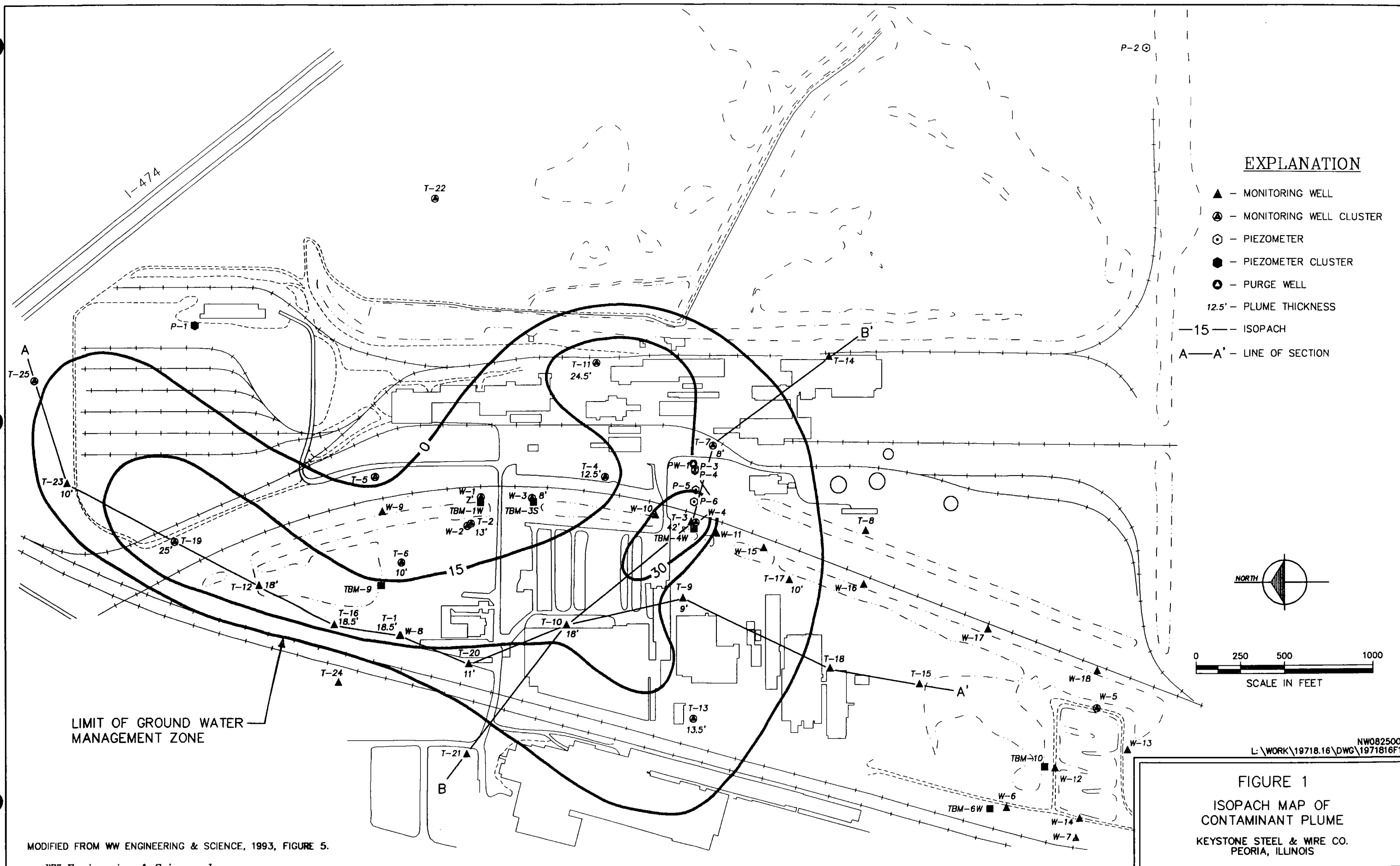
Parameters: VOCs

Acetone	Chloromethane
Benzene	Chlorodibromomethane
Bromoform	Dichlorobromomethane
Bromomethane	1,1-Dichloroethane
Carbon Disulfide	1,2-Dichloroethane
Carbon Tetrachloride	1,1-Dichloroethylene
Chlorobenzene	1,2-Dichloropropane
Chloroethane	cis-1,3-Dichloropropene
Chloroethyl Vinyl Ether	trans-1,3-Dichloropropene
Chloroform	

cis-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
trans-1,2-Dichloroethene	Tetrachloroethene
1,4-Dioxane	1,1,1-Trichloroethane
Ethylbenzene	1,1,2-Trichloroethane
2-Hexanone	Trichloroethene
Methyl Ethyl Ketone	Toluene
4-Methyl 2-Pentanone	Vinyl Acetate
Methylene Chloride	Vinyl Chloride
Styrene	Xylene (total)

Frequency:

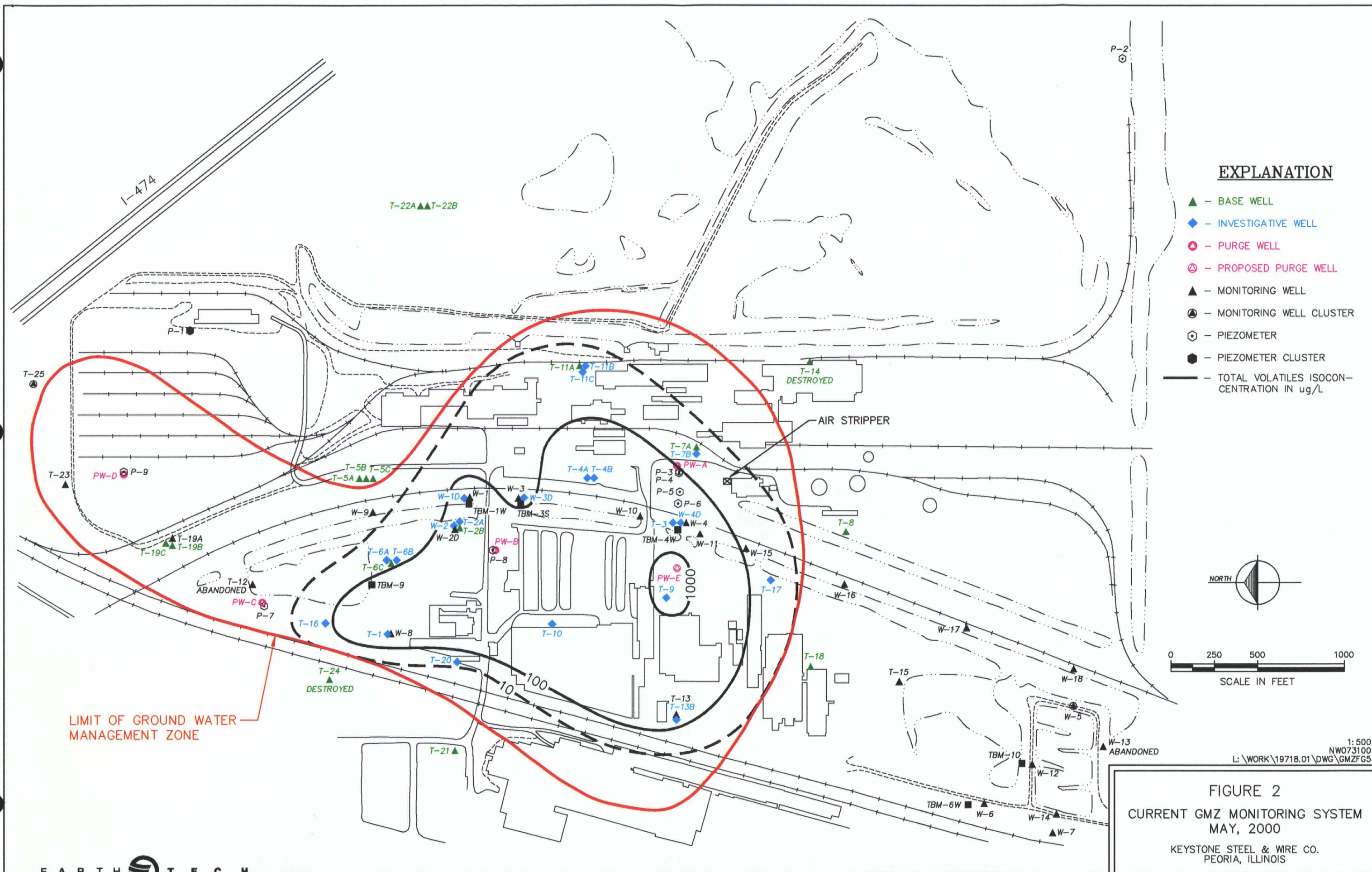
Q = quarterly
S = semi-annually

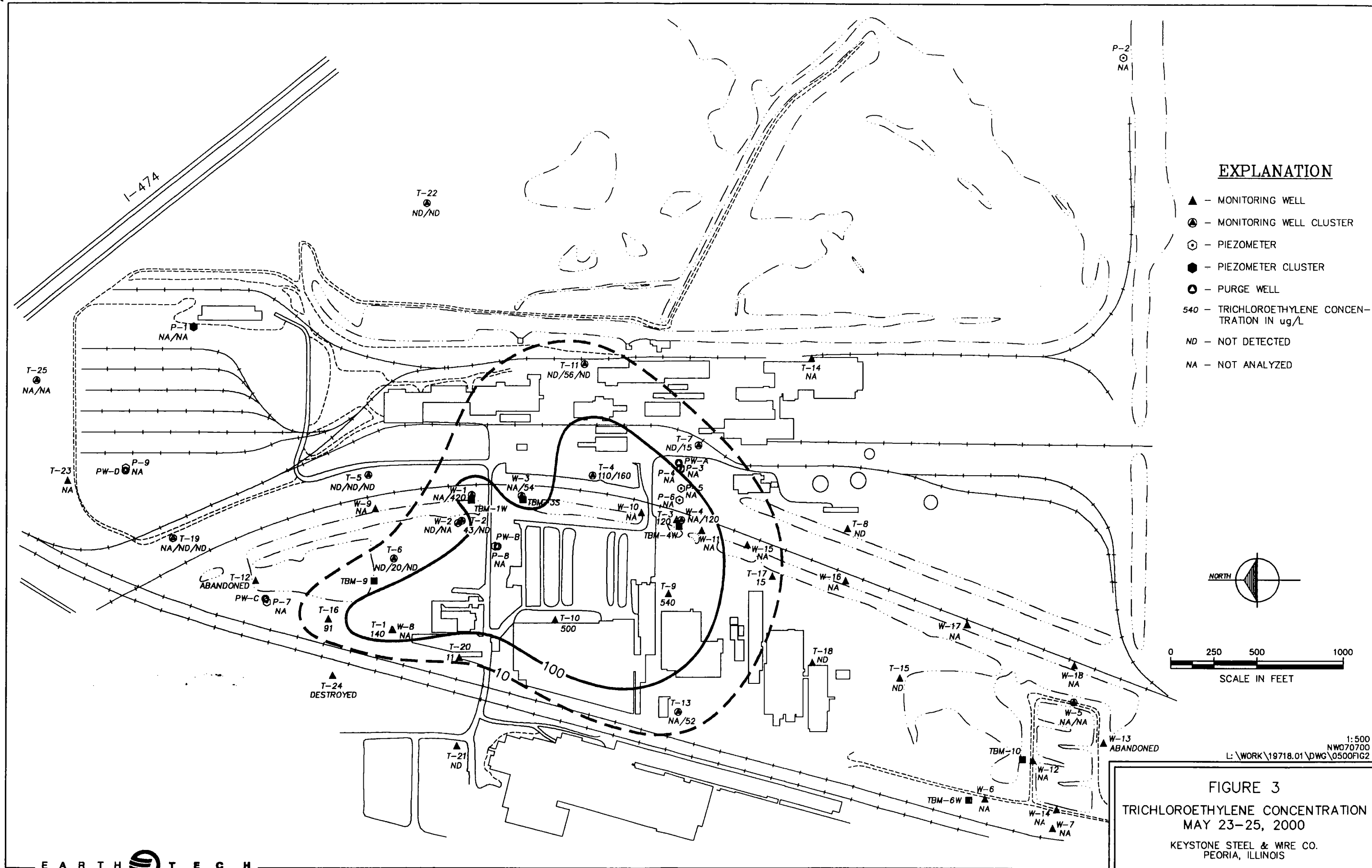


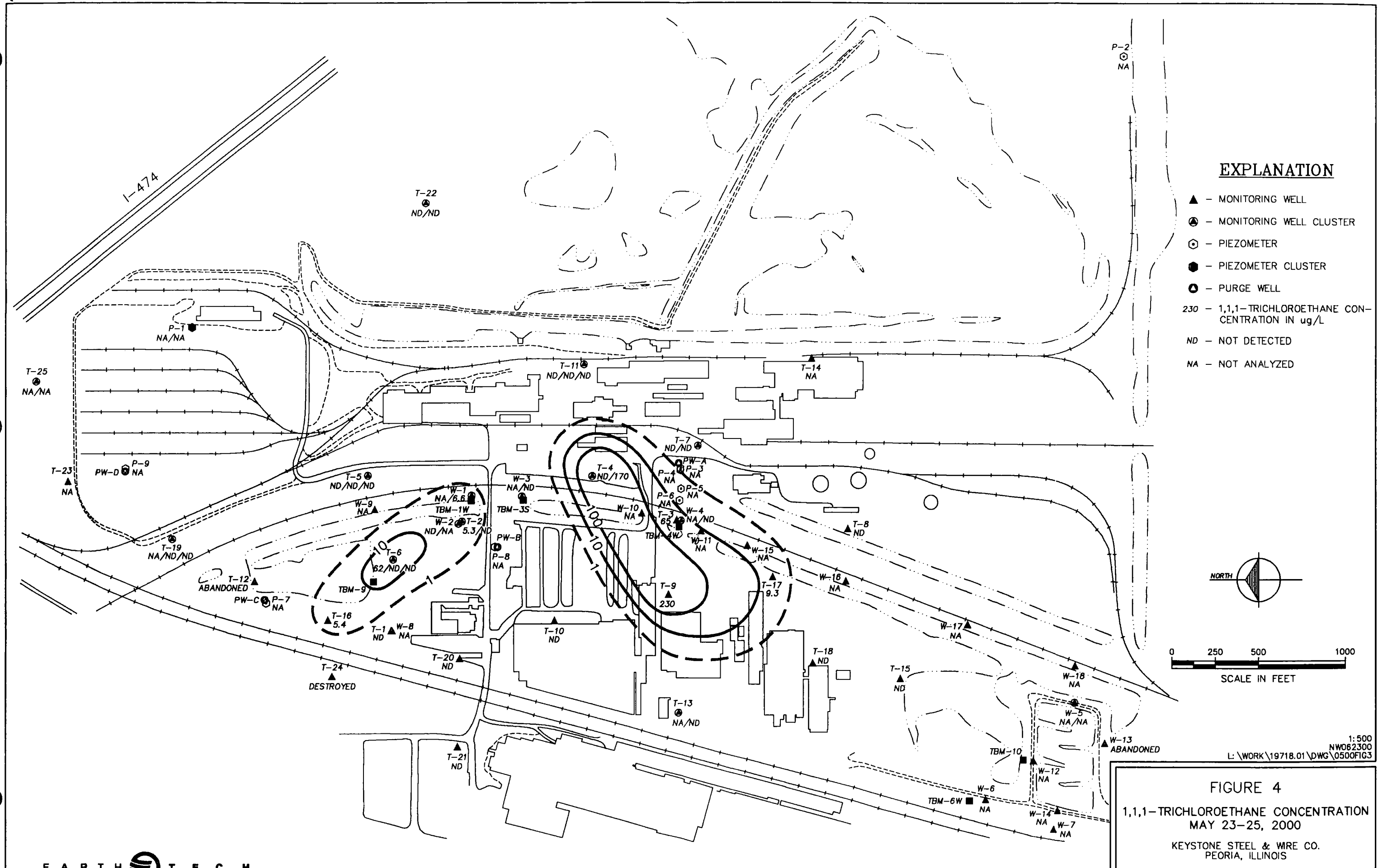
MODIFIED FROM WW ENGINEERING & SCIENCE, 1993, FIGURE 5.

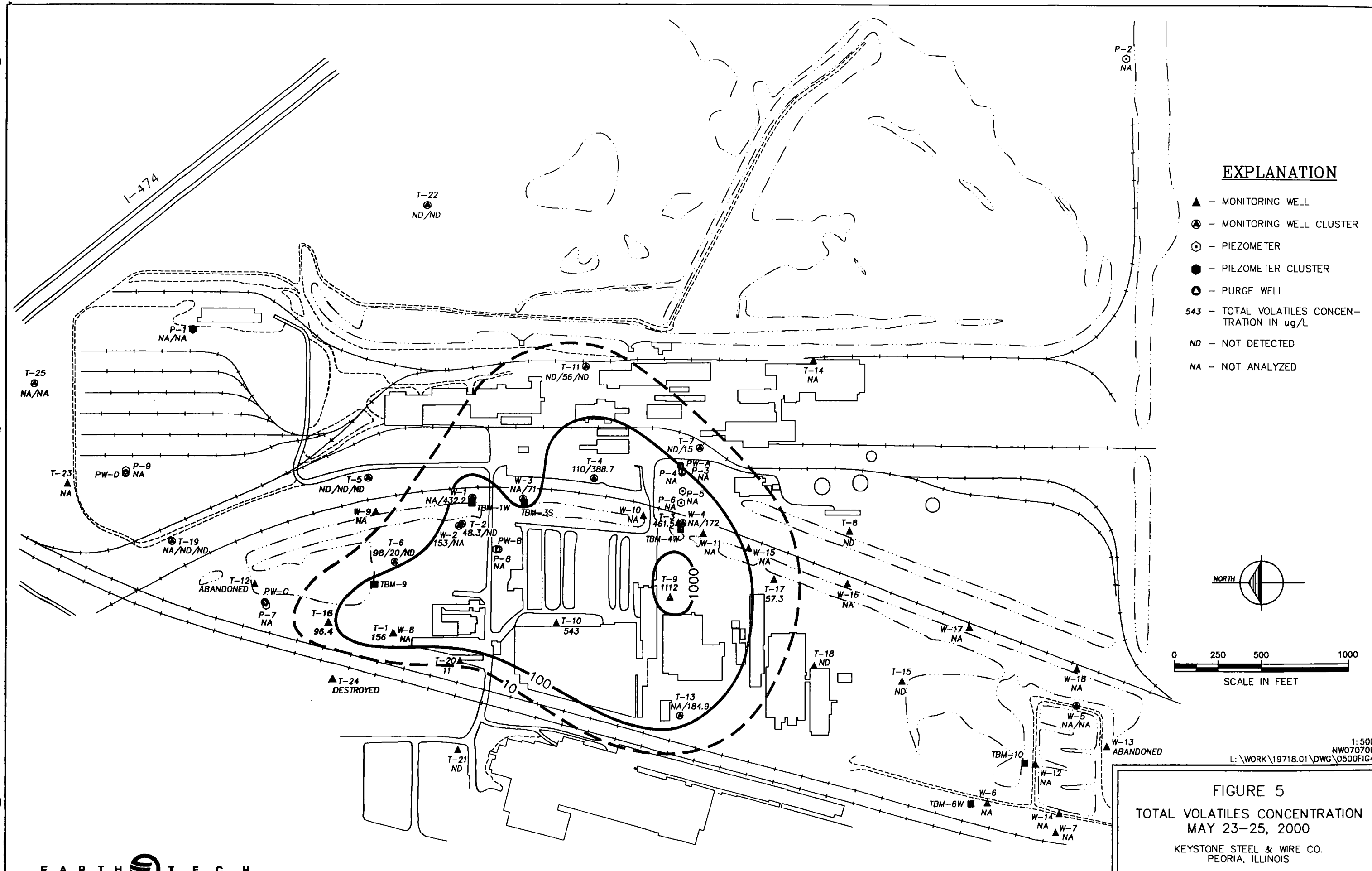
WW Engineering & Science, Inc.

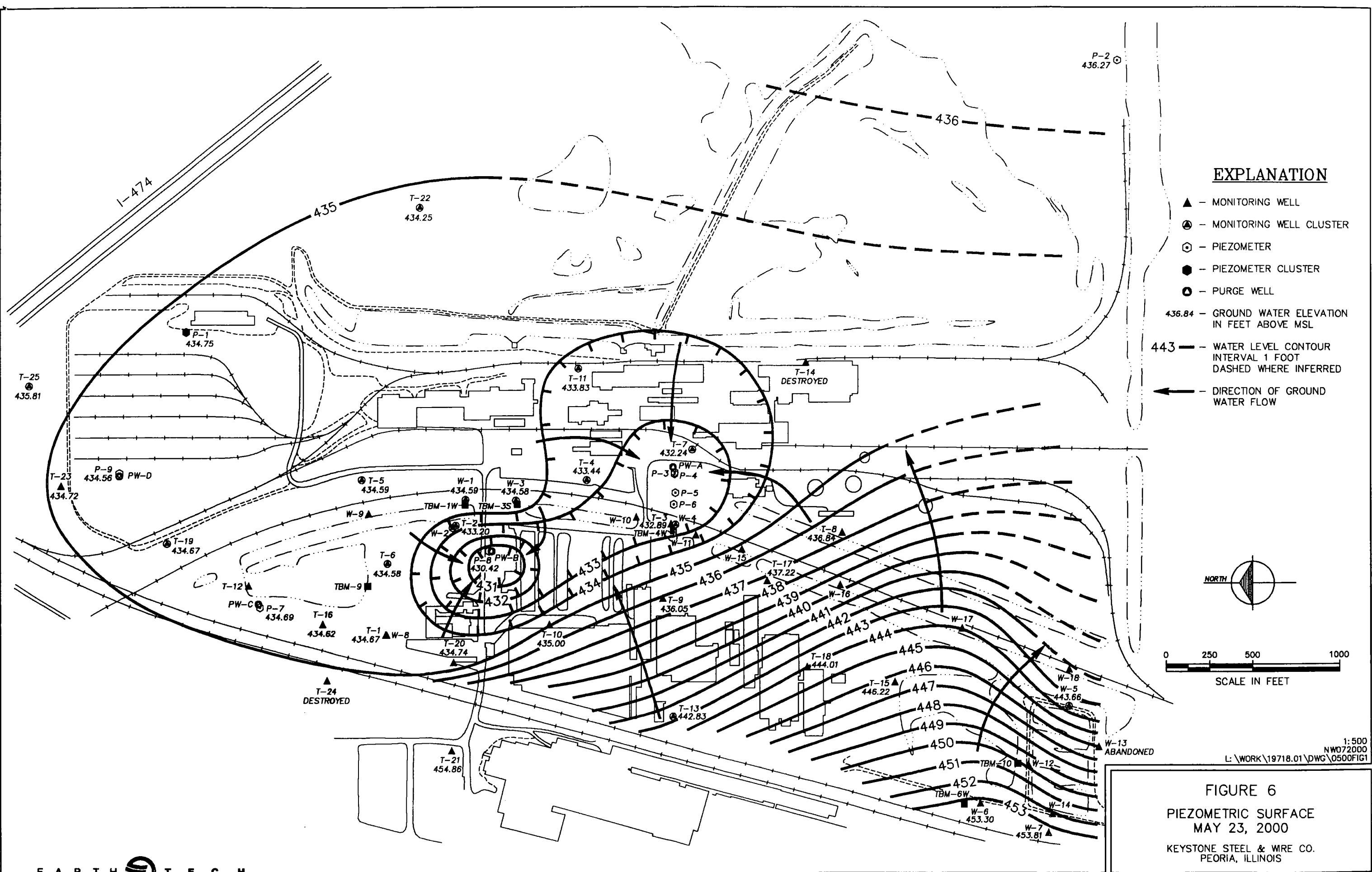
NW082500
 L:\WORK\19718.16\DWG\1971816F1





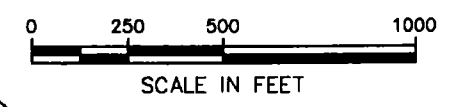
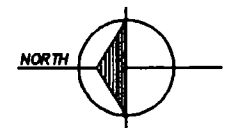






EXPLANATION

- ▲ - MONITORING WELL
- ⊙ - MONITORING WELL CLUSTER
- ⊙ - PIEZOMETER
- ⊙ - PIEZOMETER CLUSTER
- ⊙ - PURGE WELL
- 436.84 - GROUND WATER ELEVATION IN FEET ABOVE MSL
- 443 - WATER LEVEL CONTOUR INTERVAL 1 FOOT DASHED WHERE INFERRED
- ← - DIRECTION OF GROUND WATER FLOW



1:500
NW072000
L:\WORK\19718.01\DWG\0500FIG1

FIGURE 6
PIEZOMETRIC SURFACE
MAY 23, 2000
KEYSTONE STEEL & WIRE CO.
PEORIA, ILLINOIS



Illinois Environmental Protection Agency

Well Completion Report

SITE # 1430050001 COUNTY: Peoria WELL #: T-21R

SITE NAME: Keystone Steel & Wire Company BOREHOLE #: T-21R

SITE
GRID COORDINATE: X 20197.76 Y 8147.94 (or) LATITUDE 40° 38' 44" LONGITUDE 89° 38' 54"

SURVEYED BY: Daily & Associates ILL. REGISTRATION #: ILD000714881

DRILLING CONTRACTOR: Whitney & Associates DRILLER: Tim Fehl

CONSULTING FIRM: Earth Tech GEOLOGIST: Robert Aten

DRILLING METHOD: 4.25" ID HSA DRILLING FLUIDS (TYPE): None

LOGGED BY: R. Aten DATE STARTED: 11/11/99 DATE FINISHED: 11/11/99

REPORT FORM COMPLETED BY: R. Aten DATE: 3/29/00

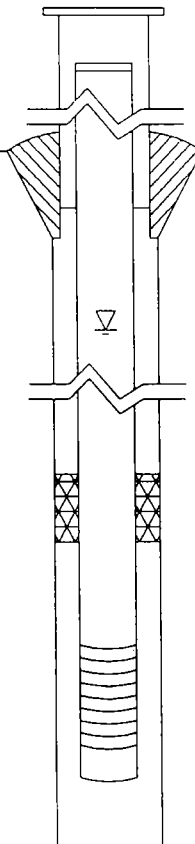
ANNULAR SPACE DETAILS

ELEVATIONS DEPTHS
(MSL)* (BGS) (.01 ft)TYPE OF SURFACE SEAL: ConcreteTYPE OF ANNULAR SEALANT: Bentonite ChipsINSTALLATION METHOD: Pour

SETTING TIME: _____

TYPE OF BENTONITE SEAL - ☒ GRANULAR ☐ PELLET ☐ SLURRY
(CIRCLE ONE)INSTALLATION METHOD: Pour

SETTING TIME: _____

TYPE OF SAND PACK: Ottawa Sand No. 12GRAIN SIZE: 0.0331 (SIEVE SIZE)INSTALLATION METHOD: PourTYPE OF BACKFILL MATERIAL: NA
(IF APPLICABLE)INSTALLATION METHOD: NA

<u>466.83</u>	<u>-0.10</u>	TOP OF PROTECTIVE CASING
<u>466.42</u>	<u>0.31</u>	TOP OF RISER PIPE
<u>466.73</u>	<u>0.00</u>	GROUND SURFACE
<u>464.23</u>	<u>2.50</u>	TOP OF ANNULAR SEALANT
<u>455.11</u>	<u>11.62</u>	STATIC WATER LEVEL (AFTER COMPLETION)
<u>458.73</u>	<u>8.00</u>	TOP OF SEAL
<u>456.43</u>	<u>10.30</u>	TOP OF SANDPACK
<u>453.88</u>	<u>12.85</u>	TOP OF SCREEN
<u>449.23</u>	<u>17.50</u>	BOTTOM OF SCREEN
<u>448.88</u>	<u>17.85</u>	BOTTOM OF WELL
<u>448.73</u>	<u>18.00</u>	BOTTOM OF BOREHOLE

* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM

WELL CONSTRUCTION
MATERIALS
(CIRCLE ONE)

PROTECTIVE CASING	SS304	SS316	PTFE	PVC	OTHER	<input checked="" type="checkbox"/> Steel
RISER PIPE ABOVE W.T.	SS304	SS316	PTFE	<input checked="" type="checkbox"/> PVC	OTHER	
RISER PIPE BELOW W.T.	SS304	SS316	PTFE	<input checked="" type="checkbox"/> PVC	OTHER	
SCREEN	<input checked="" type="checkbox"/> SS304	SS316	PTFE	PVC	OTHER	

CASING MEASUREMENTS

DIAMETER OF BOREHOLE	(in)	8
ID OF RISER PIPE	(in)	2
PROTECTIVE CASING LENGTH	(ft)	1
RISER PIPE LENGTH	(ft)	12.65
BOTTOM OF SCREEN TO END CAP	(ft)	0.35
SCREEN LENGTH (1st SLOT TO LAST SLOT)	(ft)	4.65
TOTAL LENGTH OF CASING	(ft)	17.65
SCREEN SLOT SIZE **	(in)	0.010

WW Engineering & Science

GEOSCIENCES • 627 N. Morton Street • Bloomington, Indiana 47404 PH (812) 336-0972 Fax (812) 336-0973

Site Keystone Steel & Wire Co. (07029)

Boring No. T-21

Date 4-24-91

Driller R. Crachy, Fox Drillin.

Logged by J.A. Duwelius

Elevation 466.68 ft.

Location N 20,199.74 ft.; E 8,150.07 ft.

Page 1 of 1

SAMPLE TYPE	DRIVEN RECOVERED	BLOWS/6"	DEPTH (FT)	GRAPHIC	WATER LEVEL				START		FIN.	
					TIME				TIME 12:00PM	TIME 3:1.		
					DATE				DATE 4-24-91	DATE 4-24-		
DESCRIPTION												
CS	3.5	3.2	0		Lm, peb, br (10 YR 5/3) dry, loose, strong calc, contains a single asphalt frag, ab contact 0.3',							
			1		sdy lm fill, gry (10 YR 5/1) and blk (10 YR 2/1) dry, loose, strong calc, petroleum oder, ab							
			2		contact 1.6', sdy cl lm, v dk gry (10 YR 3/1) tr pebs, moist, sl plastic, non sticky, non calc, mottled,							
			3		distinct, com, c, yel br (10 YR 5/8), coal frags com							
CS	4.5	2.0	4		Si cl lm, v dk gry (10 YR 3/1) moist, sl plastic, non sticky, non calc, mottled, distinct, com, c, yel br							
			5		(10 YR 5/8) ab contact 4.6', sdy lm fill, as above, contact 6.4' sd, f, br (10 YR 5/3) dry, hard,							
			6		compact, friable, iron oxide stain, possible weathered sandstone mica present							
			7									
			8									
SS	2.0	2.0	9		Sd/weathered sandstone, as above							
			10									
SS	2.0	2.0	11		Sd/weathered sandstone, as above, ab color change 11.1', ol gry (5 Y 4/2) bottom of sample wet							
			12									
SS	2.0	1.1	13		Shale, gry (10 YR 5/1) dry, friable, soft, non calc, weathered, ab color change 12.3', blk							
			14		(10 YR 2/1) contains gypsum/selenite crystals							
			15									
SS	2.0	1.0	16		Shale, weathered, as above							
			17									
SS	2.0	1.0	18		Shale, weathered, as above, contains large wood frag, ab contact 16.5', shale, gry (10 YR 5/1)							
			19		dry, hard, strong calc							
			20									
					T.D. 18.00 ft							

REMARKS

CME 75 equipped with 6 1/4" O.D. and 3 3/4" I.D.

WATER WELL SEALING FORM
PEORIA CITY/COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH
2116 NORTH SHERIDAN ROAD
PEORIA IL 61604

TYPE OR PRESS FIRMLY - RETURN ALL COPIES TO ADDRESS ABOVE

This form shall be submitted to this Department not more than 3 days after a potable water well, boring or monitoring well is sealed. Such wells are to be sealed not more than 30 days after they are abandoned in accordance with the sealing requirements in the Illinois Water Well Construction Code.

- 1.) Ownership (Name of Controlling Party) Keystone Steel & Wire Co.
- 2.) Well Location: 7000 S.W. Adams Street Peoria Peoria
Address-Lot Number City County
- General Description: Section 25 Township 8 (N) (~~S~~) Range 7 (E) (~~W~~)
SE Quarter of the SW Quarter of the NE Quarter
- 3.) Year Drilled 1991
- 4.) Drilling Permit No. (and date, if known) NA
- 5.) Type of Well: Bored Drilled X Other Monitoring Well T-21
- 6.) Total Depth 17.70' Diameter (inches) 2"
- 7.) Formation clear of obstruction: Yes X No
- 8.) DETAILS OF PLUGGING Tremie grout from bottom of well to ground surface
- Filled with Cement/Bentonite Grout from 0 to 17.70 feet
(cement or other materials)
- Kind of plug see above from to feet
- Filled with from to feet
- Kind of plug from to feet
- Filled with from to feet
- Kind of plug from to feet
- 9.) CASING RECORD
- Upper 3 feet of casing removed: Yes No X 1.0' removed
- If well casing consists of brick, stone, concrete blocks, porous tile, or other porous material, casing was removed to a depth of 10 feet below the surface. Yes No NA
- 10.) Date water well was sealed: Month November Day 11 Year 1999
- 11.) Licensed water well driller or other person approved by the Department performing well sealing:

<u>Whitney & Associates</u>	<u>NA</u>
NAME	COMPLETE LICENSE NUMBER
<u>2406 West Nebraska Avenue</u>	<u>Peoria</u> <u>IL</u> <u>61604</u>
ADDRESS	CITY STATE ZIP

8/88 This agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center. IL 482-0631

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

MONTHLY STATUS REPORT

DECEMBER 1994

RECEIVED

JAN 20 1995

**IEPA - BOL
PERMIT SECTION**

PREPARED BY:

**ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 94186**



cc People
USEPA

ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

JHC
HLC

A Member of the Environmental
Resources Management Group

January 13, 1995

Mr. Harry Chappel, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

Dear Mr. Chappel:

In accordance with Section VI 27 of the Consent Order, enclosed are three copies of the December 1994 Monthly Status Report for the RCRA closure activities at the Keystone Steel & Wire Company facilities in Bartonville, Illinois.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

Elton D. Breland for
Elton D. Breland, P.E.
Senior Project Manager

/DBG

Enclosures

RECEIVED
JAN 20 1995
IEPA - BOL
PERMIT SECTION

**MONTHLY STATUS REPORT
DECEMBER 1994**

1.0 INTRODUCTION

During the month of December, engineering efforts were expended to:

- prepare the bid specifications for the excavation, treatment, transport, and disposal for Remediation Steps II and III;
- prepare the Closure Plan Modification Request that outlines the changes in the remediation approach for the remaining closure activities based on experience gained during the Retention Reservoir Remediation;
- prepare the Clean Closure Sampling Plan for the North Ditch; and
- continue a technical evaluation of various remediation approaches for the remaining closure activities.

On-site activities consisted of construction of the storm water diversion modifications for the North Ditch Remediation (i.e., Remediation Steps II and III). These activities are being conducted in accordance with the June 15, 1992 Revised Phase 2 Closure Plan in preparation for the next treatment phase to be conducted in the Spring of 1995.

RECEIVED

JAN 20 1995

**IEPA - DCU
PERMIT SECTION**

2.0 REPORT APPROVAL

On December 14, 1994, the Illinois Pollution Control Board (IPCB) approved Keystone Steel & Wire Company's (Keystone's) motion for modification of the March 17, 1994 Board's Order. In this modification, Keystone requested that the adjusted standard be extended to include an additional 2,560 cubic yards of heavy metal-bearing sediments and bottom soils discovered during the Retention Reservoir Remediation. This waste pile has been designated by the Illinois Environmental Protection Agency (IEPA) as a Solid Waste Management Unit (SWMU). The waste within this unit is similar in source, color, texture, and total and Toxicity Characteristic Leachate Procedure (TCLP) metals concentrations. This waste pile will be subject to the conditions outlined in Keystone's multi-year closure plan, the Board's December 14, 1994 Order, and the July 2, 1993 Consent Order with the Attorney General of the State of Illinois (Consent Order).

3.0 DISCUSSION

During the month of December, Environmental Resources Management-North Central (ERM-North Central) prepared a bid package for the closure activities associated with Remediation Steps II and III. This bid package will be submitted to potential contractors in late-January 1995. Currently, Keystone and ERM-North Central are in the process of pre-qualifying potential bidders.

Initial efforts were expended for the preparation of a Closure Plan Modification Request for the remaining closure activities. This request outlines: (1) changes in the remediation approach based on experience gained during the Retention Reservoir Remediation, (2) the addition of the new SWMU, and (3) a revised project schedule that incorporates these changes. These changes do not impact the overall project schedule or compliance with any of the intermediate milestones. The duration of the Remediation Steps, however, have been adjusted to reflect the above changes.

As part of the Closure Plan Modification Request, ERM-North Central prepared the Clean Closure Sampling Plan for the North Ditch. This plan provides the sampling procedures and protocols to be followed during this sampling event. The basic procedures and protocols outlined in this plan are identical to those in the March 1, 1994 Clean Closure Sampling Plan for the Retention Reservoir.

A technical evaluation of various remediation approaches continued throughout this month. This evaluation focused on the capabilities of various on-shore treatment units. These units are being evaluated based upon: (1) mixing efficiency, (2) production rate, and (3) cost. Site visits in January have been scheduled to observe three of these units in operation and discuss their capabilities and limitations with on-site personnel.

Pipco of Peoria, Illinois completed construction of the storm water diversion modifications for the North Ditch. During this month, the north-south dike along the North Ditch was raised an additional three feet to increase the surge capacity of the North Borrow Area such that the waters diverted from the North Ditch can be effectively managed. These waters will be pumped to the South Ditch by a new pump station also completed this month. These modifications allow Keystone to dewater the North Ditch without a threat of flooding portions of the mill during intense storm events.

4.0 SCHEDULE

The current plan to complete closure of the North Ditch during 1995-96 is well within the milestone schedule contained in the Consent Order.

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

MONTHLY STATUS REPORT

NOVEMBER 1994

PREPARED BY:

**ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 94186**



ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

A Member of the Environmental
Resources Management Group

RECEIVED
WMD RECORD CENTER

MAR 17 1995

December 14, 1994

Mr. Harry Chappel, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

Dear Mr. Chappel:

In accordance with Section VI 27 of the Consent Order, enclosed are three copies of the November 1994 Monthly Status Report for the RCRA closure activities at the Keystone Steel & Wire Company facilities in Bartonville, Illinois.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

Elton D. Breland, P.E.
Senior Project Manager

/DBG

Enclosures

RECEIVED

DEC 19 1994

IEPA - BOL
PERMIT SECTION

MONTHLY STATUS REPORT NOVEMBER 1994

1.0 INTRODUCTION

During the month of November, engineering efforts were expended to:

- summarize additional data requested by the Illinois Pollution Control Board (IPCB) with regard to the October 24, 1994 Modification Request to Keystone Steel & Wire Company's (Keystone's) Delisting Adjusted Standard, dated March 17, 1994; and to
- continue a technical evaluation of various remediation approaches for the new Solid Waste Management Unit (SWMU) and the remaining closure activities based upon the experience gained during the Retention Reservoir remediation.

On-site activities consisted of construction of the storm water diversion modifications for the North Ditch remediation (i.e., Remediation Steps II and III). These activities are being conducted in accordance with the June 15, 1992 Revised Phase 2 Closure Plan in preparation for the next treatment phase to be conducted in the Spring of 1995.

2.0 DISCUSSION

On November 2, 1994, the Illinois Environmental Protection Agency (IEPA) filed a response to IPCB concerning Keystone's October 24, 1994 motion for modification of the

RECEIVED
DEC 19 1994
IEPA - SOL
PERMIT SECTION

March 17, 1994 Board's Order. In this response, the IEPA had no objections to the inclusion of the new SWMU as part of the closure activities being conducted at Keystone's Bartonville facility. However, on November 3, 1994, the IPCB requested additional information concerning the similarities and differences of the waste within the new SWMU and the waste covered by the Delisting Adjusted Standard.

Keystone, Environmental Resources Management-North Central, Inc. (ERM-North Central), and Kirkland & Ellis immediately summarized and compiled additional data to adequately demonstrate that the waste in the new SWMU has similar characteristics as those wastes covered by the Delisting Adjusted Standard. This data and supporting observations were submitted to the IEPA and IPCB on November 21, 1994 as an addendum to the October 24, 1994 modification request.

A technical evaluation of various remediation approaches for the new SWMU and the remaining closure activities continued throughout this month. ERM-North Central is evaluating several on-shore treatment units, transportation alternatives, and various staffing options. These parameters are being evaluated based on technical feasibility, compliance with the Consent Order milestones, and cost. The conclusions drawn from this evaluation will be summarized and provided to the IEPA in subsequent reports.

Pipco of Peoria, Illinois continued construction of the storm water diversion modifications for the North Ditch. During this month, soils were excavated from the North Borrow Area and stockpiled along the existing north-south dike. These soils will be used to raise the north-south dike an additional three feet. In preparation for the addition of these soils, the surface of this dike was grubbed and roughed. This dike is being raised to increase the capacity of the North Borrow Area such that the waters diverted from the North Ditch can be effectively managed. These waters will be pumped to the South Ditch by a new pump station. This pump station is currently under construction by Pipco. During this month, Pipco completed the piping associated with the discharge line from the new pump station and several catch basins along the

North Ditch that diverts water into the North Borrow Area. The storm water diversion modifications for the North Ditch are expected to be substantially completed by the end of December.

3.0 SCHEDULE

The current plan to complete clean closure of the North Ditch during 1995-96 is well within the milestone schedule contained in the July 2, 1993 Consent Order between Keystone and the Attorney General of the State of Illinois.

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

MONTHLY STATUS REPORT

OCTOBER 1994

RECEIVED

NOV 17 1994

IEPA - BUL
PERMIT SECTION

RECEIVED

~~OCT 17 1994~~ *ju*

IEPA - BUL
PERMIT SECTION

PREPARED BY:

ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 94186



cc People
USE-A

ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

A Member of the Environmental
Resources Management Group

November 14, 1994

Mr. Harry Chappel, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

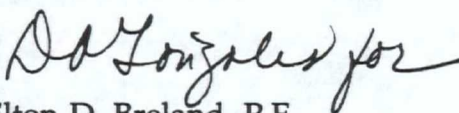
Dear Mr. Chappel:

In accordance with Section VI 27 of the Consent Order, enclosed are three copies of the October 1994 Monthly Status Report for the RCRA closure activities at the Keystone Steel & Wire Company facilities in Bartonville, Illinois.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.


Elton D. Breland, P.E.
Senior Project Manager

/DBG

Enclosures

RECEIVED

OCT 17 1994

IEPA - BOL
PERMIT SECTION

RECEIVED

NOV 17 1994

IEPA - BOL
PERMIT SECTION

MONTHLY STATUS REPORT OCTOBER 1994

1.0 INTRODUCTION

During the month of October, engineering efforts were expended for:

- preparation of a Modification Request to the Illinois Pollution Control Board (IPCB) to amend the Adjusted Standard to include the new Solid Waste Management Unit (SWMU);
- preparation of the bid specifications for the North Ditch remediation; and
- technical evaluation of the remediation approach for the new SWMU and the remaining closure activities based upon the experience gained during the Retention Reservoir remediation.

However, during this month, no additional engineering efforts were expended for the preparation of the Closure Plan modification request that outlines an alternative remediation approach for the remaining closure activities and the clean closure analytical laboratory bid specifications. Construction of the storm water diversion modifications for the North Ditch remediation (i.e, Remediation Steps II and III) continued throughout the month of October.

2.0 DISCUSSION

During this month, Keystone Steel & Wire Company's (Keystone's) legal counsel, Kirkland & Ellis of Chicago, Illinois, prepared a request to the IPCB to amend the March 17, 1994 Board Order. This addendum was submitted on October 24, 1994. The purpose of this request is to add the new SWMU to the list of units to be closed in accordance

RECEIVED
OCT 17 1994
IEPA - DOL
PERMIT SECTION

with the revised Phase II Closure Plan, dated June 15, 1992 and, therefore, subject to the conditions stipulated in the Board Order. This unit was discovered by Keystone during the construction of the Temporary Container Storage Area (TCSA) during the Retention Reservoir Remediation. Analytical test results demonstrate that the contaminated soils within the new SWMU have similar total metals concentrations as the sediments in the remaining units to be remediated. Keystone's legal counsel has discussed this addendum with the Illinois Environmental Protection Agency (IEPA) and no objections were noted.

The bid specifications for the excavation, treatment, and disposal of the sediments and bottom soils within the North Ditch are being prepared by Environmental Resources Management-North Central (ERM-North Central). These specifications will be completed in November and issued later this fall upon completion of the storm water diversion modifications.

ERM-North Central is conducting a technical evaluation of the remediation approach for the new SWMU and the remaining closure activities. As part of this evaluation, a bench scale treatability study is being conducted to verify the treatment criteria, alkalinity ranges, and blending procedures developed during the Retention Reservoir remediation. The conclusions drawn from this evaluation will be summarized and provided as part of the Closure Plan Modification Request.

Pipco of Peoria, Illinois completed mobilization during the last week in September and began construction in early October. Initial activities consisted of dewatering the North Ditch and plugging the north end of the interconnecting culvert between the North Ditch and Mid-Mill Ditch. This isolated the North Ditch from the plant activities except for surface water runoff from the immediate vicinity. Currently, Pipco is constructing several catch basins to collect this water before it flows into the North Ditch. This water will be piped to the North Borrow area, which will be used as a surge basin for the new

pump station to be constructed later this fall. This pump station will pump this water from the North Borrow area to the South Ditch.

3.0 SCHEDULE

All remediation activities conducted by Keystone have been completed in accordance with the milestone outlined in the July 2, 1993 Consent Order between Keystone and the Attorney General of the State of Illinois. Contingent upon approval of the July 29, 1994 Closure Documentation Report for the Retention Reservoir, the Closure Plan modification request (to be submitted later this fall), and the October 24, 1994 addendum to the March 17, 1994 IPCB Order, Keystone is planning to begin the excavation, treatment, and disposal activities at the North Ditch in the spring of 1995.

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

MONTHLY STATUS REPORT

JULY 1994

RECEIVED
AUG 15 1994

PREPARED BY:

ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 92136



ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

A Member of the Environmental
Resources Management Group

August 12, 1994

Mr. Lawrence W. Eastep, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RECEIVED
WMD RECORD CENTER

SEP 20 1994

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

ILD000714881 ✓

Dear Mr. Eastep:

In accordance with Section VI 27 of the Consent Order, enclosed are three copies of the July 1994 Monthly Status Report for the RCRA closure activities at the Keystone Steel & Wire Company facilities in Bartonville, Illinois.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

Elton D. Breland, P.E.
Senior Project Manager

EDB/JEG/DBG

Enclosures

RECEIVED

AUG 15 1994

PERMIT SECTION

MONTHLY STATUS REPORT JULY 1994

1.0 INTRODUCTION

During the month of July, engineering efforts were expended for:

- preparation of the storm water diversion contract documents for Steps II and III of the RCRA closure activities;
- evaluation of alternative remediation approaches; and
- preparation of the closure documentation report for the Retention Reservoir.

No on-site activities occurred.

2.0 REPORTS/PLANS/DOCUMENTS

Environmental Resources Management-North Central (ERM-North Central) evaluated the data collected during the hydraulic survey of the drainage ditch system performed by Daily & Associates Engineering, Inc. (Daily) of Peoria, Illinois. Based upon this data, Daily and ERM-North Central have designed a storm water diversion plan for the North Ditch. The contract documents associated with this plan were completed in early July and issued by Keystone on July 11, 1994. Construction of these modifications is scheduled to begin in September.

On May 2, 1994, Keystone submitted a revised master project schedule for the remaining five remediation steps and a detailed schedule for remediation of the North Ditch (Steps II and III). As outlined on this schedule, Keystone is proposing modification to the June

RECEIVED

AUG 15 1994

PERMIT SECTION

15, 1992 Revised Phase 2 Closure Plan (Closure Plan). Currently, Keystone and ERM-North Central are evaluating various approaches for the remediation of the North Ditch based upon the experience gained during the remediation activities at the Retention Reservoir. Subsequent to this evaluation, a formal closure plan modification will be prepared and submitted to the IEPA.

Analytical analysis of the clean closure samples collected from the Retention Reservoir were completed during the month of July by the Environmental Laboratory Division of WW Engineering & Science in Grand Rapids, Michigan. These results have been evaluated by ERM-North Central and are included as part of the Closure Documentation Report for the Retention Reservoir. This report was submitted by Keystone to the IEPA on July 29, 1994.

3.0 SCHEDULE

All remediation activities to date have been completed in accordance with the milestones outlined in the July 2, 1993 Consent Order between Keystone and the Attorney General of the State of Illinois. Keystone is currently expending engineering efforts for the closure of the North Ditch in accordance with the September 2, 1996 milestone. The storm water diversion plan has been completed and construction is scheduled to begin in September of this year.

RECEIVED
WMD RECORD CENTER

JAN 17 1995

**Status Report on the Efficacy of the
Ground Water Remediation System,
Keystone Steel & Wire Co.,
Bartonville, Illinois**

Prepared by:
Earth Tech
5010 Stone Mill Road
Bloomington, Indiana

August 19, 1994

RECEIVED
AUG 22 1994
IEPA - 60
PERMIT SECT:

Table of Contents

	<u>Page</u>
Summary	1
Introduction	1
Methods	2
Discussion	2

Figures

Figure No.

1. Total Volatiles Concentration February 24-25, 1993
2. Total Volatiles Concentration May 17-18, 1994
3. Potentiometric Surface November 15, 1993
4. Potentiometric Surface May 16, 1994
5. Hydrographs for wells W-1D, W-2, W-3, and T-2A
6. Hydrographs for wells W-4D, T-3, T-4A, T-4B, and T-17
7. Hydrographs for wells T-9, T-10, and T-13B.
8. Hydrographs for wells T-1, T-6A, T-6B, T-16, and T-20
9. Hydrographs for wells T-19C and T-23
10. Hydrographs for wells T-7B, T-11B, and T-11C
11. Total Monthly Precipitation January 1991 through June 1994
12. Time-series Plot of Influent and Effluent Samples from the Air Stripper

Summary

This report is submitted as a response to provision 1 of the April 6, 1994 letter of approval from Mr. Douglas W. Clay of the Illinois Environmental Protection Agency (IEPA) to Mr. Dale L. Bennington of Keystone Steel & Wire Company (Keystone). Provision 1 requires Keystone to "...demonstrate that the effective limit of the corrective action process is at least as reaching as: a. groundwater monitoring wells W-1D, W-2, W-3D, W-4D, T-1, T-2A, T-3, T-4A, T-4B, T-6A, T-6B, T-7B, T-9, T-10, T-11B, T-11C, T-13B, T-16, T-17, T-19C, T-20, and T-23 (as illustrated by Figure 1) and b. the vertical extent of known contamination as defined by the approved clean-up objectives".

Evaluations of potentiometric surface maps, iso-concentration maps for total volatile organic compounds (VOCs), hydrographs, time-series plots of VOC concentration, influent-effluent plots, and geologic cross-sections indicate that both of the elements of provision 1 of the IEPA letter have been demonstrated.

Introduction

The intent of this report is to show that: 1) the wells in the Ground Water Management Zone (GWMZ) occur within the limits of the VOC plume, 2) the direction of ground water flow within much of the GWMZ has been reversed as a result of pumping at the four purge wells, 3) ground water elevations at all but two of the wells in the GWMZ have been decreasing overall during remediation, 4) the air stripper is effectively reducing total VOC concentrations of the extracted water to below detection limit levels (i.e., 5 ug/L), and 5) the presence of bedrock below sands bearing the affected ground water limits the vertical extent of the GWMZ.

The wells within the GWMZ were installed at various times during the period 1987 through 1992. Soil boring logs and well completion diagrams for these wells have been previously submitted to IEPA in the document entitled "Proposed Ground Water Management Zone for Keystone Steel & Wire Company Bartonville, Illinois, July 16, 1993" (hereafter referred to as Proposal) or in earlier documents.

RECEIVED

AUG 22 1994

SOL
PERMIT SECTION

A four purge-well pump and treat system was installed at the site during late 1993 and early 1994. The VOC-bearing water is pumped to an air stripping unit where the concentration of total VOCs is reduced to below detection limit levels. The system began operation in February 1994.

Methods

As required by the April 1994 IEPA letter, the following monitoring wells located within the GWMZ are evaluated herein: W-1D, W-2, W-3D, W-4D, T-1, T-2A, T-3, T-4A, T-4B, T-6A, T-6B, T-7B, T-9, T-10, T-11B, T-11C, T-13B, T-16, T-17, T-19C, T-20 and T-23.

For the purposes of this report, the evaluation of the adequacy of the corrective action system with respect to the limits of the approved GWMZ is based on the horizontal and vertical extent of total VOCs in ground water, temporal changes of the water levels in the monitoring wells of concern, temporal changes in the spatial orientation of the piezometric surface as deduced from water level data, on the extent of removal of VOCs from ground water at the air stripper, and on the spatial orientation of sands that contain the affected water as illustrated in geological cross sections.

Discussion

Prior to initiation of remediation activities, all of the monitoring wells of concern were contained within the 10 ug/L isopleth of the Total Volatiles Concentration map of February 24-25, 1993 (Figure 1). A comparison of this map to the May 17-18, 1994 map (Figure 2) shows the effects of remediation as a distinct reduction in the size of the VOC plume, particularly on the north of the facility. Note that the 10 ug/L isopleth on the 1994 map is surrounded by wells at which VOCs were not detected above the detection limit of 5 ug/L (e.g., Figure 2, T-25, T-23, T-5, T-22, T-14, T-8, T-18, T-15, and T-21).

Before remediation the potentiometric surface map for the site indicated that the direction of ground water flow was overall consistently toward the east (Figure 3). After the start of remediation in February 1994, the direction of ground water flow was reversed over much of the GWMZ in response to pumping at the four purge wells (Figure 4). Everywhere within the GWMZ, the ground water flow directions are toward purge wells rather than toward the GWMZ

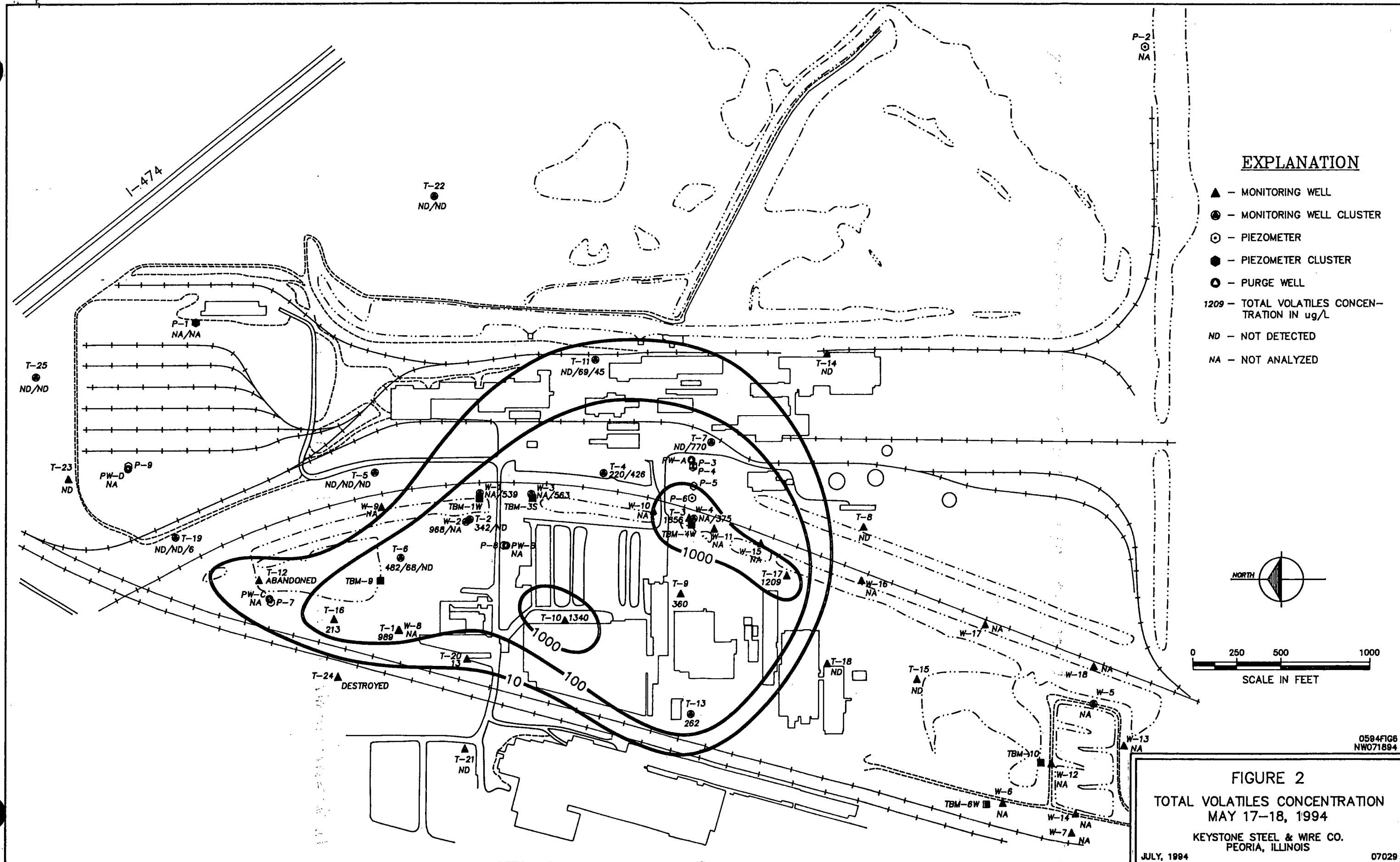
boundaries. A distinct depression in the piezometric surface (Figure 3) has developed near the center of the contaminant plume, particularly in the area of purge wells PW-A and PW-B.

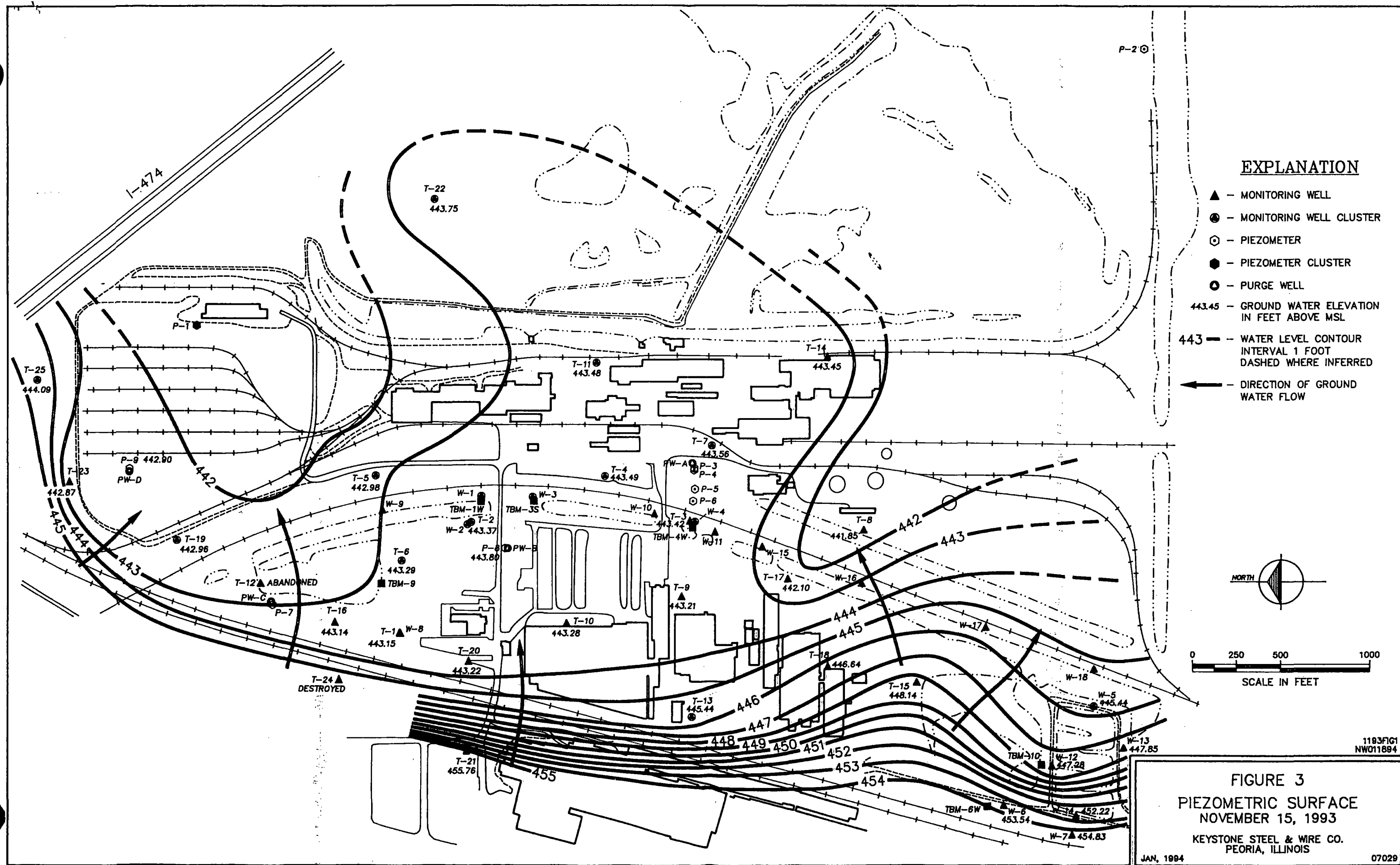
Hydrographs for all except two of the wells (W-2 and T-6A) within the GWMZ exhibit very similar patterns (Figure 5 through Figure 10). Except for W-2 and T-6A, all hydrographs exhibit major lows in September 1991 and October 1992 with an intervening high from March to May 1992. Perhaps most notable are the extreme high water levels that occurred between April and October 1993, reflecting historic amounts of rainfall during this period (Figure 11). Overall, water levels in most of the wells have been decreasing since April 1993 (in some cases July 1993). Unfortunately, the effect of ground water withdrawals by the purge wells on water levels in the wells of interest is somewhat masked by the changes resulting from the extreme precipitation during much of 1993.

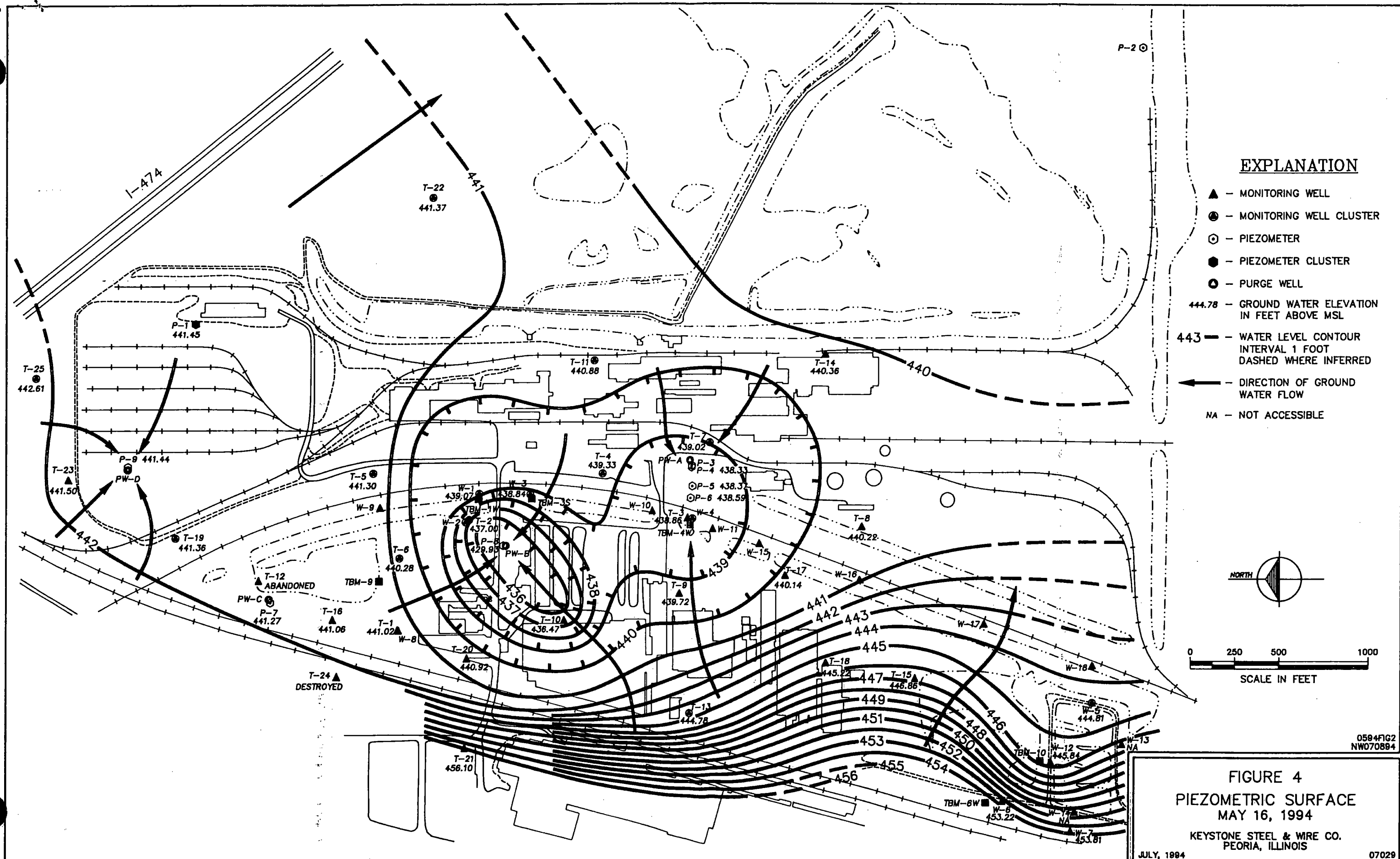
The hydrographs for W-2 and T-6A (Figure 5 and Figure 8) are similar to one another, but are distinctly different than the hydrographs for the other wells of interest. These patterns suggest that the hydrologic unit within which the wells are screened is distinctly different than the unit sampled by the other wells of interest. Water levels in wells W-2 and T-6A are not affected greatly by seasonal variations in precipitation. They are shallow, completed in thin sandy zones contained in fine-grained alluvium, and are apparently affected more by surface-water bodies than by precipitation. Consequently, the time required for the purge system to affect the water levels in these two wells is much greater than for the deeper wells that are completed in more permeable sand and gravel.

The effectiveness of the remediation system is evident from a comparison of concentration of total VOCs in samples from the air stripper influent water and effluent water (Figure 12). The results for all effluent samples since startup have been less than detection limit (5 ug/L). As of the end of June 1994, over 91 million gallons of water have been treated.

Cross sections A-A' and B-B' of the 1993 Proposal clearly show that the sand units that contain the VOC-bearing ground water are bounded below by shale bedrock, which controls the vertical extent of contamination. The horizontal extent of contamination is being controlled by ground water withdrawal at the four purge wells, as documented by ground water flow directions (Figures 4), decreasing water levels (Figures 5 through 10), and the isopleths of total VOC concentrations (Figures 1 and 2).







Keystone Steel & Wire Company

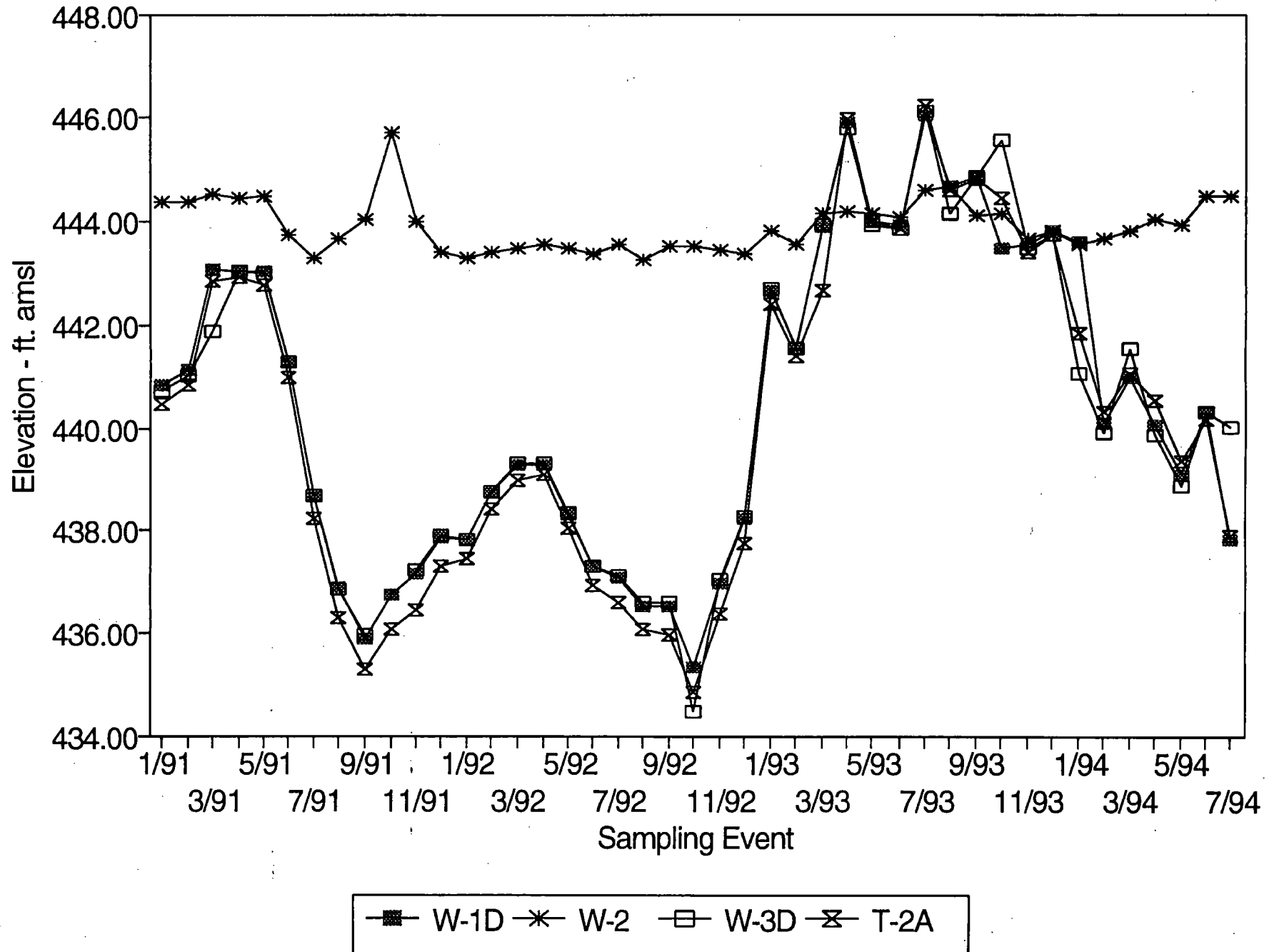


Figure 5. Hydrographs for wells W-1D, W-2, W-3, and T-2A.

Keystone Steel & Wire Company

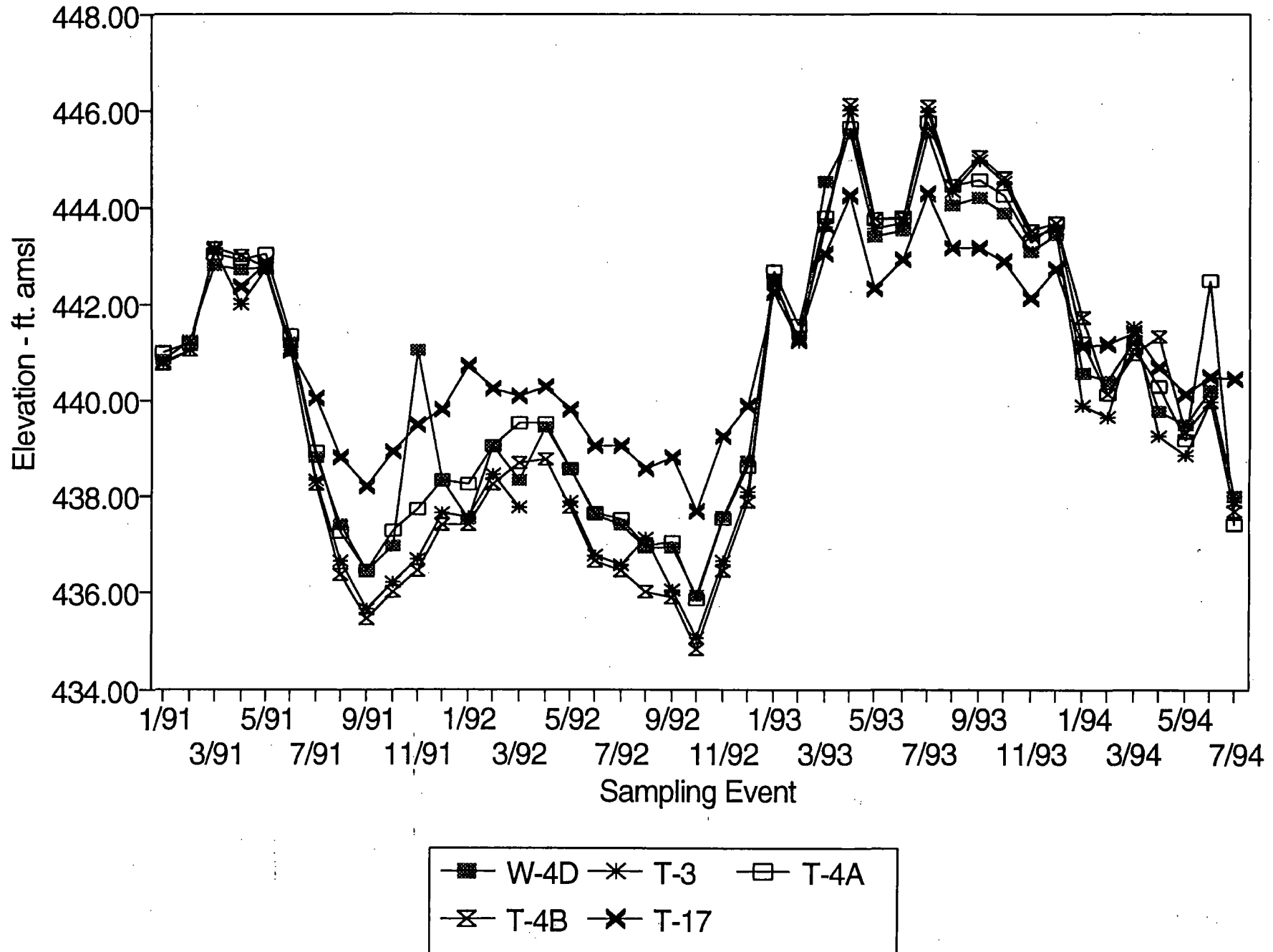


Figure 6. Hydrographs for wells W-4D, T-3, T-4A, T-4B, and T-17.

Keystone Steel & Wire Company

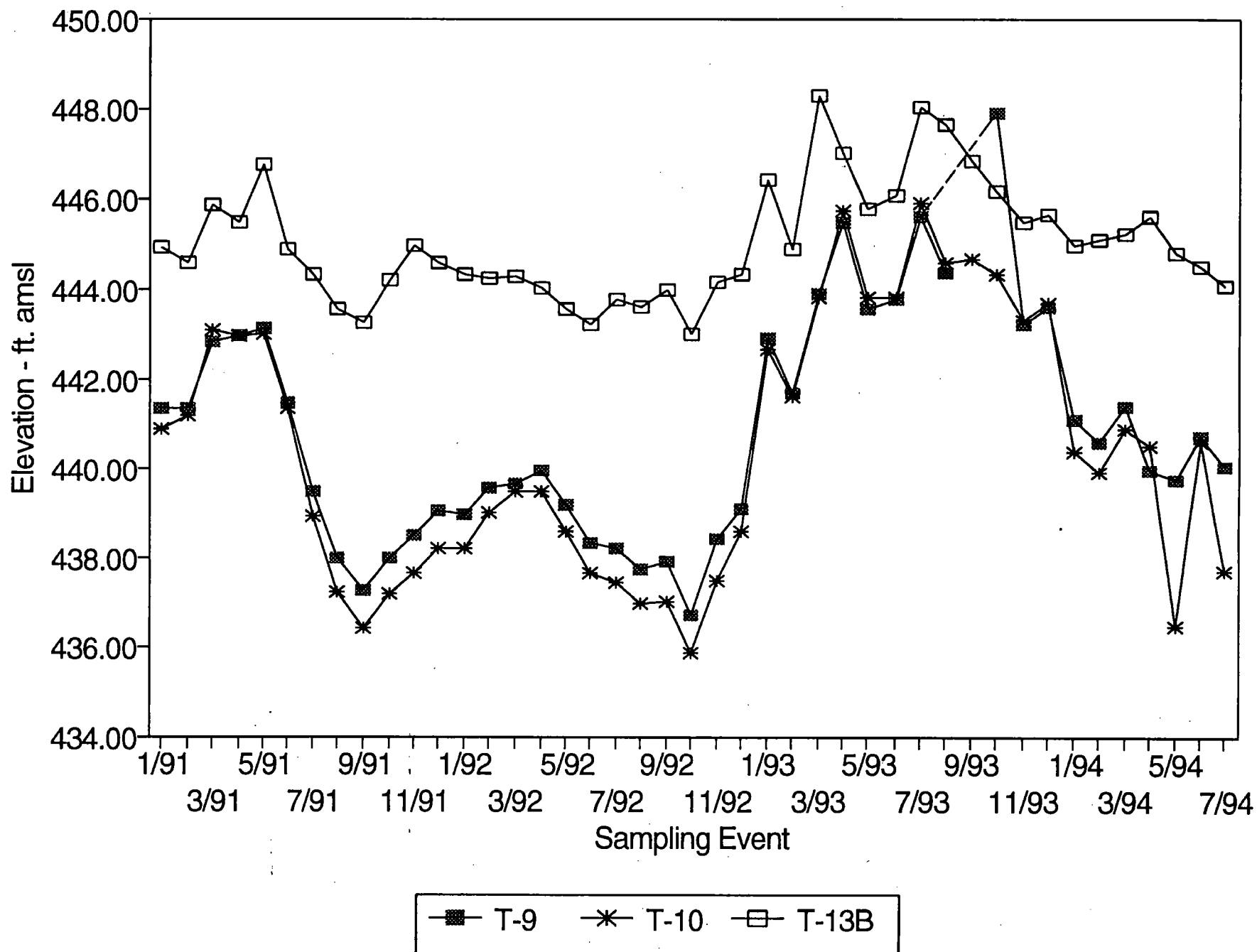


Figure 7. Hydrographs for wells T-9, T-10, and T-13B.

Keystone Steel & Wire Company

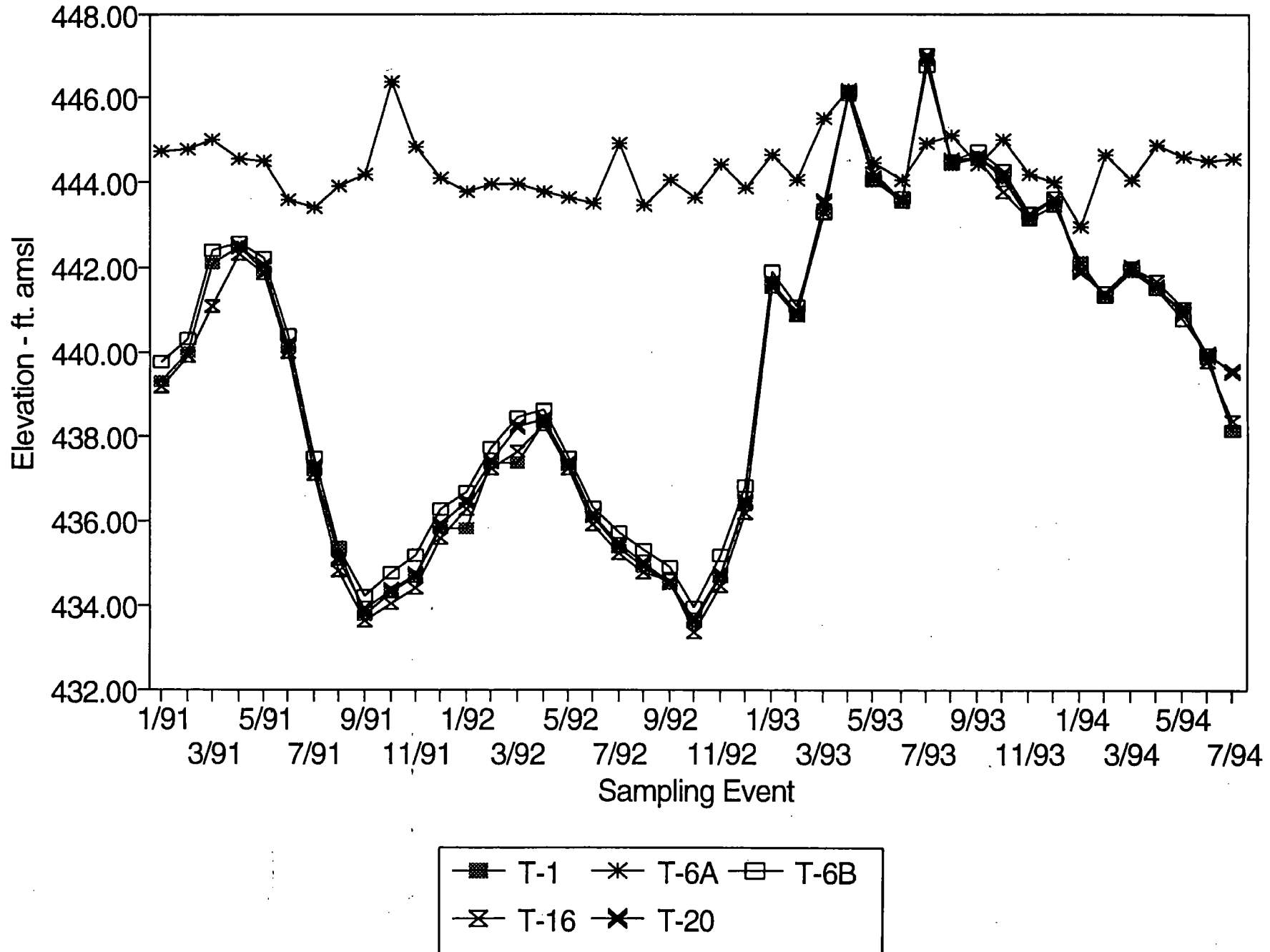


Figure 8. Hydrographs for wells T-1, T-6A, T-6B, T-16, and T-20.

Keystone Steel & Wire Company

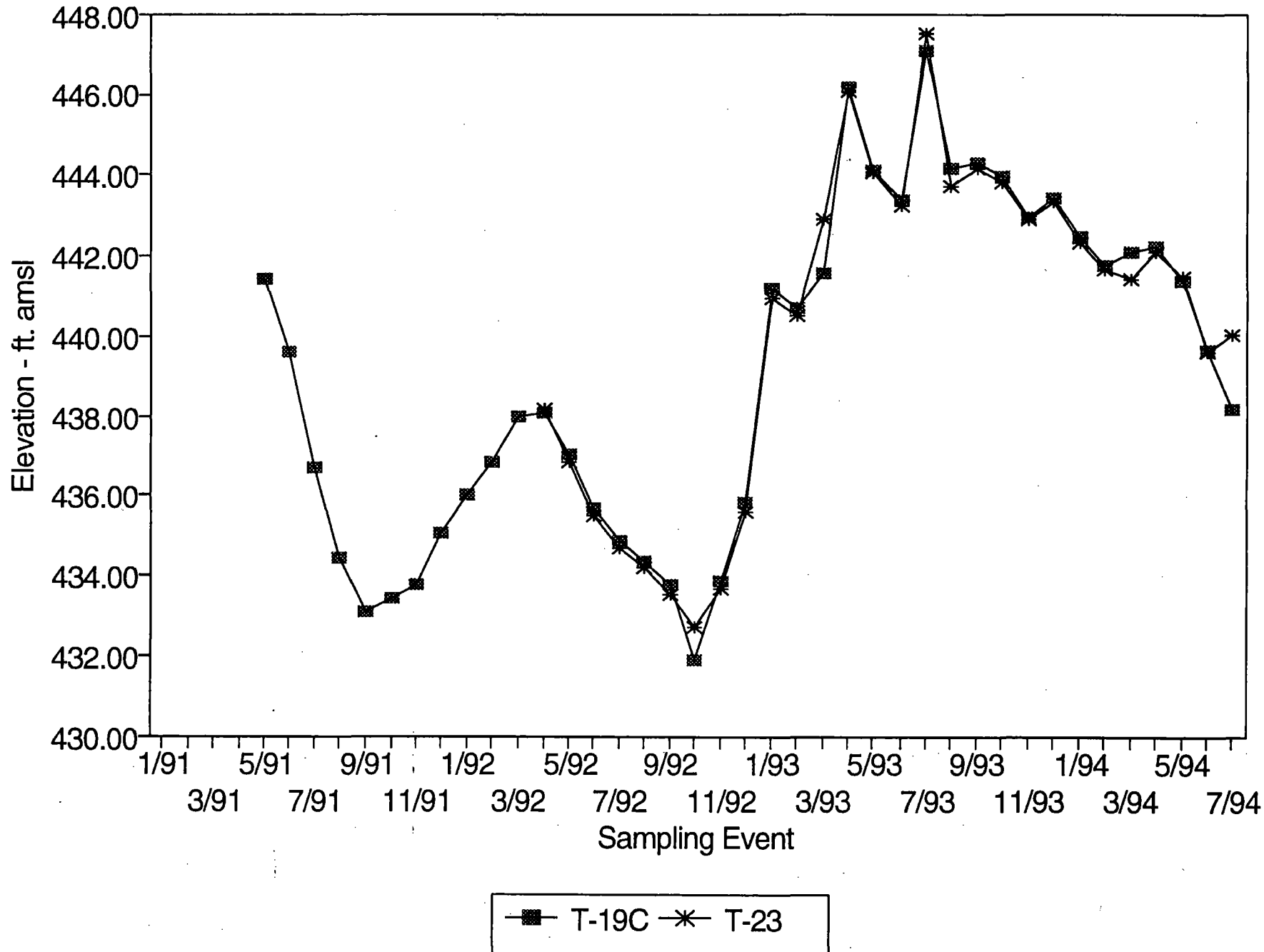


Figure 9. Hydrographs for T-19C T-23.

Keystone Steel & Wire Company

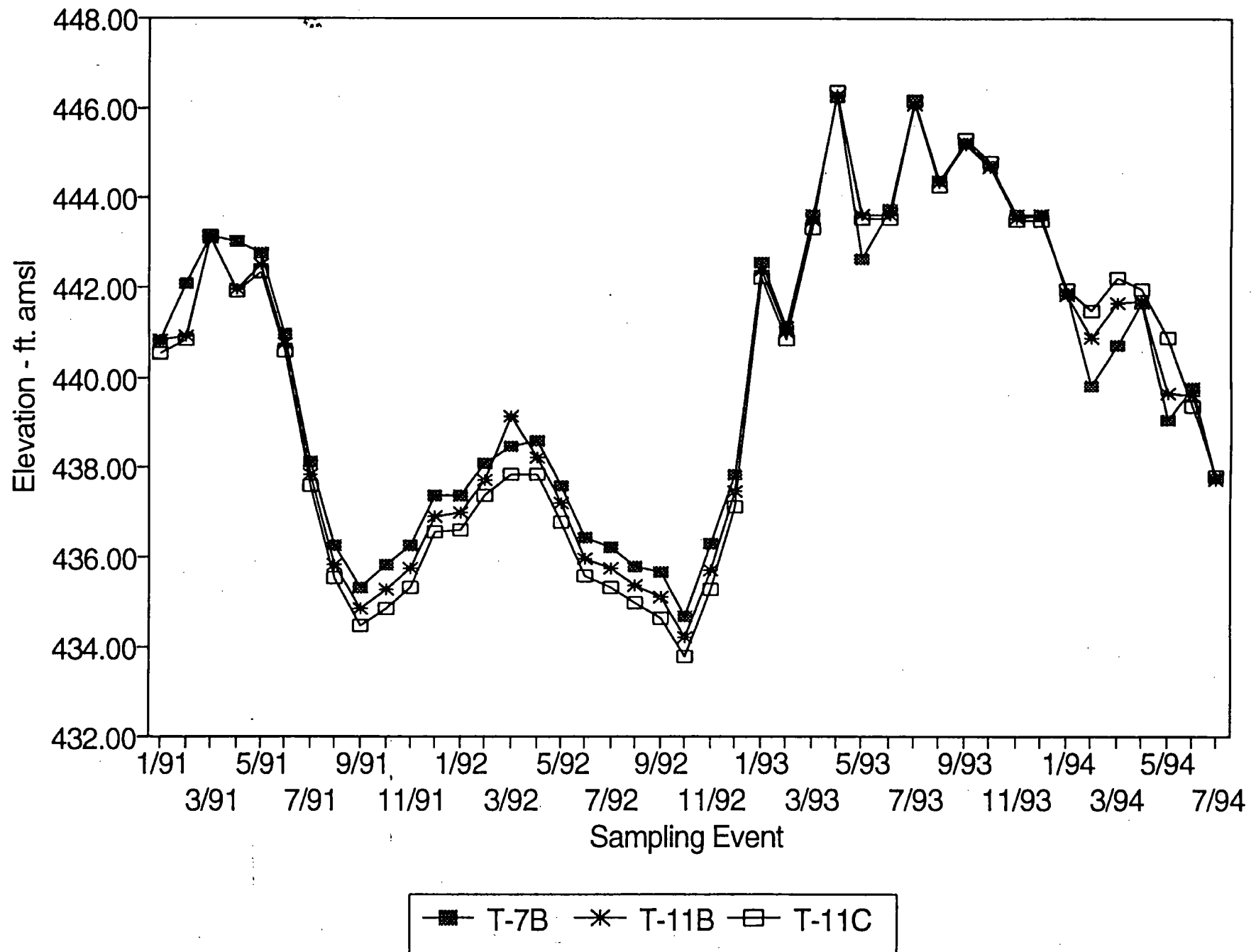


Figure 10. Hydrographs for wells T-7B, T-11B, and T-11C.

Keystone Steel & Wire Company

Station: Peoria Airport

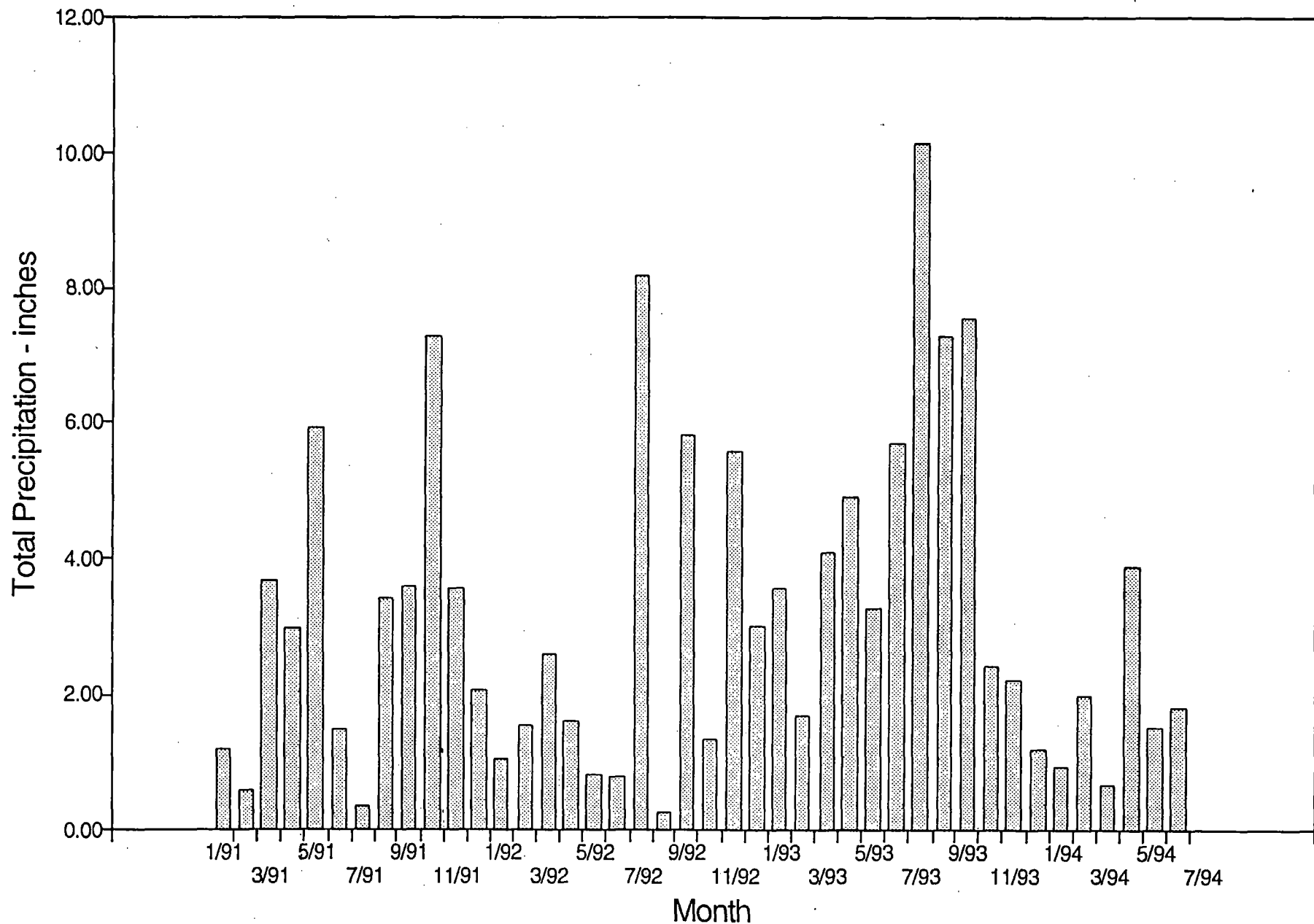


Figure 11. Total Monthly Precipitation January 1991 through June 1994.

Keystone Steel & Wire Company Performance Data for Air Stripper

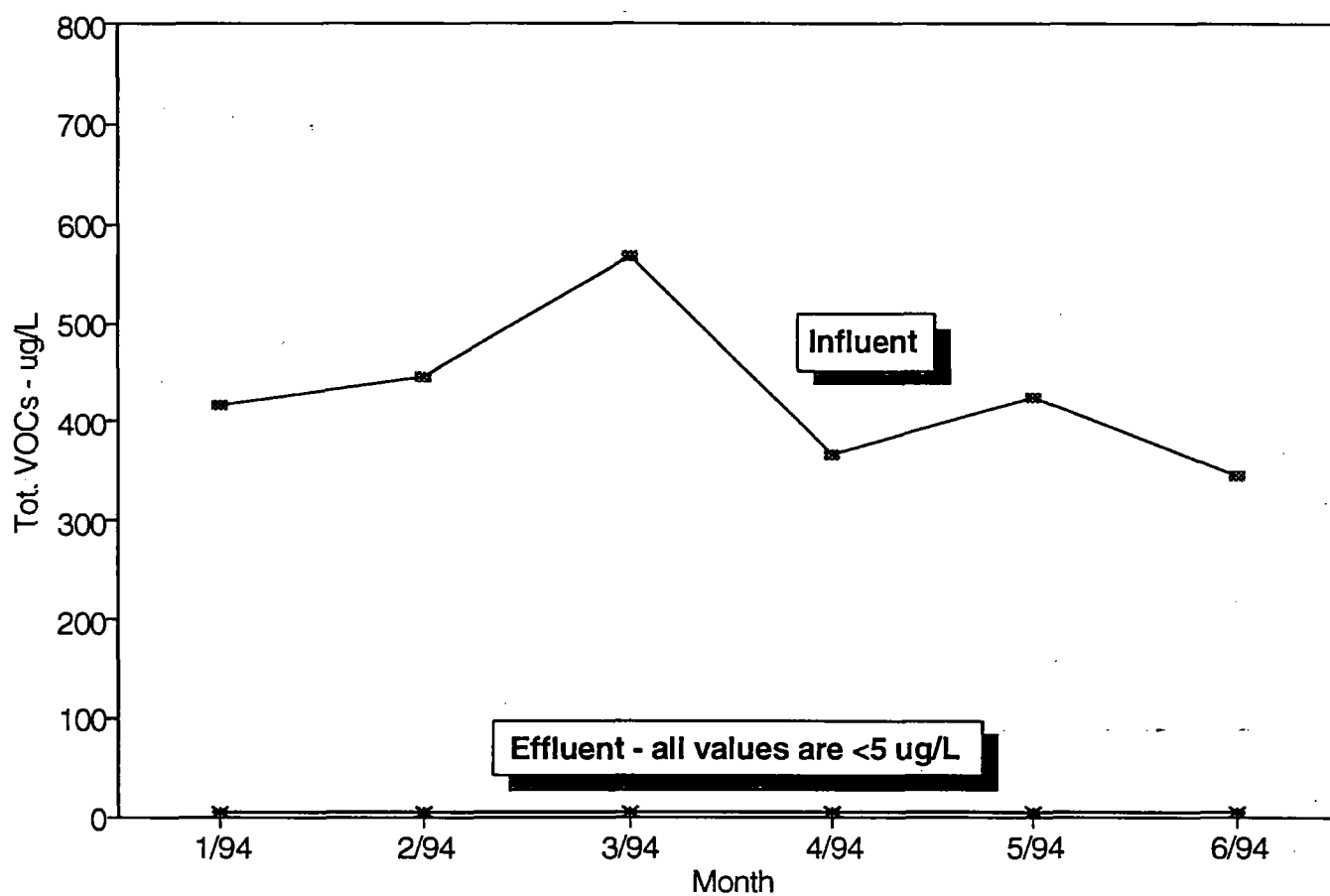


Figure 12. Time-series Plot of Influent and Effluent Samples from the Air Stripper.

August 19, 1994

Mr. Michael K. Franklin
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Mr. Joseph E. Svoboda
General Counsel
Division of Legal Counsel
Illinois Env. Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Mr. Dale L. Bennington, P.E.
Manager, Energy and Env. Engineering
Keystone Steel & Wire Company
7000 S.W. Adams Street
Peoria, Illinois 61641

Gentlemen:

RE: People of the State of Illinois vs
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103
(Status Report on the Efficacy of the Ground Water Remediation System)

In accordance with Section XIX Notices of the Consent Order, enclosed is the above-referenced report as specified in provision 1 of the April 6, 1994 letter of approval from Mr. Douglas W. Clay of Illinois Environmental Protection Agency. Three copies of this document are being submitted to Mr. Lawrence Eastep and one copy each is being submitted to the remaining addressees. We are also sending one copy (Certified Mail) to Mr. Ken Lovett of the Illinois Environmental Protection Agency, Permit Section.

Sincerely,

EARTH TECH



Robert E. Aten
Vice President

cc: K. Lovett
R. Miller
D. Semelroth
A. Running
E. Breland

Illinois Environmental Protection Agency
Mr. Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Mr. Ralph P. End, Esq.
Vice President and General Counsel
Keystone Consolidated Industries, Inc.
Three Lincoln Centre
5430 LBJ Freeway
Suite 1740
Dallas, Texas 75240

RECEIVED
WMD RECORD CENTER

JAN 17 1995

Telephone

812.336.0972

Facsimile

812.336.3991

143 0050001 - Peoria
Keystone Steel & Wire
10D000714881
Subpart F

RECEIVED
AUG 22 1994
IEPA - BUL
PERMIT SECTION

E A R T H  T E C H

Formerly WW Engineering & Science

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT**

MARCH 1994

RECEIVED

APR 19 1994

PERMIT SECTION

PREPARED BY:

**ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 92136**



USEPA

ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

A Member of the Environmental
Resources Management Group

April 15, 1994

RECEIVED
WMD RECORD CENTER

AUG 15 1994

Mr. Lawrence W. Eastep, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

Dear Mr. Eastep:

In accordance with Item VI 27 of the Consent Order, enclosed are three copies of the March 1994 Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

Elton D. Breland, P.E.
Senior Project Manager

/DBG

Enclosures

APR 19 1994

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 DISCUSSION	1
2.1 Permitting	1
2.2 Reports/Plans/Documents	2
3.0 ON-SITE ACTIVITIES	2
3.1 Mobilization	2
3.2 Excavation/Hauling/Disposal	3
3.2.1 Excavation/Loading	3
3.2.2 On-Site Hauling/Staging	3
3.2.3 Verification Sampling and Analysis	4
3.2.4 Off-Site Disposal	4
3.3 Project Schedule	4

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT
MARCH 1994**

1.0 INTRODUCTION

During the month of March off-site efforts relative to the remediation of the treated materials in the Retention Reservoir included: (1) approval of landfill permit application for Waste Management's Tazewell Recycling and Disposal Facility, (2) preparation and submittal of the Annual Report for 1993, (3) completion and submittal of the Clean Closure Sampling Plan, (4) initiate the preparation of the Contract Documents for Clean Closure laboratory services, and (5) preparation and submittal of a permit application for an alternative landfill permit.

On-site remediation activities during the month of March consisted of: (1) completion of excavation/hauling mobilization, (2) extensive excavation/hauling/disposal activities, (3) verification sampling to confirm adequate treatment, and (4) construction of a Transfer Station to improve the efficiency of the off-site transportation of materials to the Tazewell County Landfill.

2.0 DISCUSSION

2.1 Permitting

The Illinois Environmental Protection Agency (IEPA) approval of the landfill permit application for disposal of the treated and delisted materials from the Retention Reservoir in the Tazewell Recycling and Disposal Landfill facilities (located in East Peoria, Illinois and operated by Waste Management, Inc.) was confirmed by telephone communication on March 2, 1994. A facsimile copy of the landfill permit was received by Keystone and Waste Management at the end of the day on March 2, 1994.

RECEIVED

APR 19 1994

An alternative disposal facility, Peoria City/County Municipal Landfill, operated by Peoria Disposal Company of Peoria Illinois, was selected by Keystone and a landfill permit application prepared and submitted during the week of March 21, 1994. As of March 31, the permit application was still under review by the IEPA.

2.2 Reports/Plans/Documents

The 1993 Annual Report was prepared by ERM-North Central, Inc. which summarizes the remediation activities involved with treatment of the sediments in the Retention Reservoir and subsequent delisting of the treated sediments. The Annual Report was prepared and submitted to the appropriate state agencies on March 31, 1994 in accordance with the requirements set forth in IEPA's September 30, 1992 Closure Plan Approval Letter and the July 2, 1993 Consent Order between Keystone and the Attorney General of the State of Illinois.

A Clean Closure Sampling Plan defining the procedures to be followed during clean closure sampling of the Retention Reservoir was finalized and submitted to the IEPA for review on March 16, 1994. Preparation of the Contract Documents for analysis of Clean Closure samples was started during the latter half of March. These documents will be issued to qualified laboratories in the first half of April in a competitive bidding process.

3.0 ON-SITE ACTIVITIES

3.1 Mobilization

Mobilization activities by ITEX, ERM-North Central, Waste Management, and Daily Analytical laboratories (conducting on-site analytical services) were completed on March 3, 1994. The mobilization activities during the first three days of March primarily consisted of completion of the loading/decontamination pads and receiving additional roll-off containers on site.

3.2 Excavation/Hauling/Disposal

3.2.1 Excavation/Loading

Removal of sediments from the Retention Reservoir during March was accomplished by the movement of treated sediments within the reservoir to two consolidation locations from which material is loaded into roll-off containers at one loading pad location. One dozer and three long stick backhoes are being utilized to complete these activities.

By March 31, 1994, a total of 14,461 cubic yards of treated sediments (equivalent to 18,800 tons) were removed from the Retention Reservoir, or approximately 41% of the estimated 35,000 cubic yards of treated sediments present.

The rate of excavation and loading increased steadily throughout the month as the efficiency of the operation improved with experience. By the end of March, the average number of roll-off containers filled per day was 83 or approximately 1,018 cubic yards per day.

3.2.2 On-Site Hauling/Staging

As proposed, loaded roll-off containers were transported from the loading/decontamination pads at the Retention Reservoir to a 190,000 square foot temporary container storage area (TCSA) which was constructed during January and February 1994. The TCSA was used to provide a storage area for the filled roll-off containers until the verification sampling analytical results confirmed that the contents are acceptable for transport to the Tazewell County Landfill for disposal as a non-hazardous special waste.

3.2.3 Verification Sampling and Analysis

Verification sampling of each roll-off container was performed by ERM-North Central and the samples generated were analyzed by Daily Analytical Laboratories in an on site laboratory equipped to perform analysis for alkalinity and TCLP metals. The verification analytical results showed that by March 31 the quantity of treated sediments meeting delisting requirements totaled 12,748 cubic yards and the treated sediments not in compliance with delisting requirements totaled only 60 cubic yards (approximately 0.47% of the materials tested was not in compliance). These off-spec materials (five roll-off containers) were transported and emptied into the Mid-Mill Ditch (an on-site RCRA Unit) as specified in the June 15, 1992 Phase II Closure Plan.

3.2.4 Off-Site Disposal

By March 31, 1994 a total of 12,748 cubic yards (16,572 tons) of treated sediments were transported for off-site disposal at the Tazewell County Landfill facility, or approximately 36.4% of the 35,000 cubic yards of treated sediment originally present.

In order to minimize the number of trips to the landfill, ITEX constructed a concrete Transfer Station which is used to transfer materials from roll-off containers to dump trailers. This allows an increase in load capacity from 15 tons per roll-off container to approximately 22 tons per a dump trailer. This also allows ITEX to overload roll-off containers and thereby minimize the number of containers on site.

3.3 Project Schedule

In accordance with the July 2, 1993 Consent Order milestone, the scheduled project start date is two weeks after IPCB approval of the Adjusted Standard Petition for delisting the treated sediments. Since approval was granted on February 17, 1994, the start date for excavation/hauling/disposal remediation activities was revised to March 3, 1994.

Remediation activities relative to excavating/hauling/disposal of the 35,000 cubic yards of treated sediment within the Retention Reservoir have been tentatively scheduled for completion on April 26, 1994.

The consolidation of sediments began on March 3, 1994 immediately after receiving approval of the landfill permit application by the IEPA on March 2, 1994. The first set of Verification Sampling results were available on March 7 and consequently, the first treated sediments transported to the Tazewell County Landfill on that day. On March 31, excavation/hauling/ disposal activities appeared to be approximately three days behind the self-imposed schedule for removal of the 35,000 cubic yards of treated sediment within the Retention Reservoir. Attempts are underway to improve production rates and the projected completion date, including negotiations with the Peoria City/County Municipal Landfill to obtain an additional landfill permit and serve as an alternate disposal facility.

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT**

JANUARY 1994

RECEIVED

FEB 16 1994

**IEPA - BOL
PERMIT SECTION**

PREPARED BY:

**ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 92136**



ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

cc: People
USED

A Member of the Environmental
Resources Management Group

JK
ML

February 15, 1994

Mr. Lawrence W. Eastep, P.E.
Manager - Permits Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794

RE: People of the State of Illinois vs.
Keystone Consolidated Industries, Inc.
Case No. 93 CH 000103

ILD000714881

Dear Mr. Eastep:

D. 3.6

In accordance with Item VI 27 of the Consent Order, enclosed are three copies of the January 1994 Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

John E. Driftnor for

Elton D. Breland, P.E.
Senior Project Manager

/DBG

Enclosures

RECEIVED

FEB 16 1994

IEPA - BOL
PERMIT SECTION

RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT
JANUARY 1994

INTRODUCTION

During the month of January, engineering efforts were expended for data evaluation and report preparation. On-site activities consisted of construction of the temporary container storage area (TCSA) that will be used during the excavation, hauling, and disposal activities of the approximately 35,000 cubic yards of treated sediments within the Retention Reservoir at the Keystone Steel & Wire Company (Keystone) facility in Bartonville, Illinois.

DISCUSSION

In late December 1993, Keystone conducted preliminary bottom soil sampling of the clays that underly the treated sediments within the Retention Reservoir. The purpose of this sampling event was to delineate areas of untreated bottom soils that do not meet the delisting requirements before any excavation activities begin. This approach alerts the excavation contractor to specific areas in which special controls must be implemented to ensure that contaminated bottom soils from these areas will not be entrained and removed with the adequately treated sediments. The analytical testing was completed on January 18, 1994 by Daily Analytical Laboratories of Peoria, Illinois. These results were evaluated, and then incorporated as part of the Sediment Excavation Control Plan. This plan will be submitted to the Illinois Environmental Protection Agency (IEPA) in early February 1994.

In addition, the Clean Closure Sampling Plan was prepared during the month of January. This plan provides an outline of the sampling procedures, analytical parameters, and sample locations. Much of the information necessary to prepare this

plan was unavailable during the preparation of the revised Phase II Closure Plan, dated June 15, 1992. This plan also will be submitted to the IEPA in early February.

On January 21, 1994, Keystone submitted the Sediment Removal Verification Sampling Plan to the IEPA for review. This plan provides details concerning the verification sampling protocol as outlined in the August 2, 1993 Adjusted Standard Petition, only differing in the level of detail provided.

Construction of the TCSA began on January 10, 1994. The TCSA is being constructed to comply with the guidance provided by the IEPA during an October 8, 1993 meeting and a November 19, 1993 site visit. The purpose of the TCSA is to provide an area where containers of treated sediments can be temporarily stored while verification testing is being completed. Construction is scheduled for completion in early February 1994.

SCHEDULE

Currently, all contracts for the excavation, hauling, disposal, and analytical testing of the approximately 35,000 cubic yards of treated sediments within the Retention Reservoir have been issued. These contracts were issued assuming the Adjusted Standard Petition would be approved by Illinois Pollution Control Board (IPCB) by February 1, 1994. However, Keystone has been informally notified that some delay in the approval of the petition is expected and, therefore, will result in a day-for-day slippage in the February 15, 1994 remediation start date and the subsequent July 2, 1993 Consent Order milestones.

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT**

FEBRUARY 1993

PREPARED BY:

**ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MO 63303
ERM PROJECT 92136**



ERM-North Central, Inc.

1630 Heritage Landing Drive
Suite 100
St. Charles, MO 63303
314-928-0300
314-928-2050 Fax

A Member of the Environmental
Resources Management Group

February 15, 1993

Mr. Lawrence W. Eastep, P.E.
Manager - Permits Section
Division of Land Pollution Control
P.O. Box 19276
Springfield, IL 62794

RECEIVED

FEB 17 1993

**EPA - BOL
PERMIT SECTION**

RE: January 1993 Monthly Status Report
Retention Reservoir Remediation
Keystone Steel & Wire - Bartonville, Illinois

Dear Mr. Eastep:

Enclosed are three copies of the January 1993 Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at 314/928-0300 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.

Elton D. Breland /jcv
Elton D. Breland, P.E.
Sr. Project Manager

EDB/jcv

Enclosures

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT
FEBRUARY 1993**

INTRODUCTION

Treatment of all materials in the retention reservoir was satisfactorily completed in the month of February 1993. Most of the work during the month was centered around retreatment of sediments in which a substantial amount of access road material was entrained and the remaining sediment which did not meet the treatment requirements. Implementation of a pumping system was started for the purpose of removing excess water from the retention reservoir which accumulates from precipitation and water released due to the consolidation of treated sediment.

TREATMENT VOLUMES

The locations of all cells treated from the beginning of the project through February 25, 1993 are shown on the color-coded Progress Map included as Attachment A. The total volume of materials acceptably treated by the end of the in-situ stabilization is 34,687 yd³. No additional materials within the retention reservoir remain untreated.

ANALYTICAL RESULTS

All material within the retention reservoir (34,687 yd³) was acceptably treated by February 25, 1993 under the revised treatment requirements: (1) within an acceptable alkalinity range of 130,000 to 192,000 mg/kg, (2) within a conditionally acceptable alkalinity range of 115,000 to 215,000 mg/kg, and (3) below a TCLP lead concentration of 0.218 mg/l. The basis for these treatment requirements was discussed in the September Monthly Status Report.

Statistical plots of all alkalinity data for performance samples taken between February 1 and February 25, 1993 are shown in Figures 72 through 80, which are included as Attachment B. Figures 1 through 71 in the October through January Monthly Status Reports show that only 22 samples exceeded the conditional alkalinity range. Figures 72 through 80 of this report show that only two (2) additional samples exceeded the conditional alkalinity range. Overall, only 24 samples out of a total of over 2,153 samples tested are outside the conditionally acceptable range (or 98.9% of all samples are within the conditional range). Two (2) additional samples exceeded the TCLP lead criteria of 0.218 mg/l during the month of February 1993. Overall, a total of only four (4) samples have exceeded TCLP requirements throughout the project where alkalinity requirements were within the conditionally acceptable range.

All areas associated with samples not within the alkalinity and/or TCLP treatment specifications have been either remixed and/or retreated. Subsequent resampling has shown that all of these cells are now within treatment specifications.

In the January Monthly Status Report, it was speculated that the occasional appearance of samples with slightly elevated levels of TCLP lead could be caused by a marginal detrimental affect of winter conditions on treatment efficiency. Since this condition only appeared in a total of four samples, we feel that it is a relatively rare localized effect and should not be of concern. Moreover, upon remixing and/or retreatment of these areas, the elevated TCLP results disappeared. In some cases, the elevated TCLP values could not even be duplicated by resampling prior to additional remixing or retreatment.

PROJECT SCHEDULE

Treatment activities were completed and all analytical results received by February 25, 1993. Performance sampling results confirm that all materials in the retention reservoir have been successfully treated. ITEX completed demobilization and left the site on the afternoon of February 25, 1993.

Due to the severity of the weather and frozen ground conditions, final policing of the area in the immediate vicinity of the retention reservoir will be postponed until ground conditions are dry and unfrozen. This final clean-up will be performed by a qualified and adequately safety-trained local contractor.

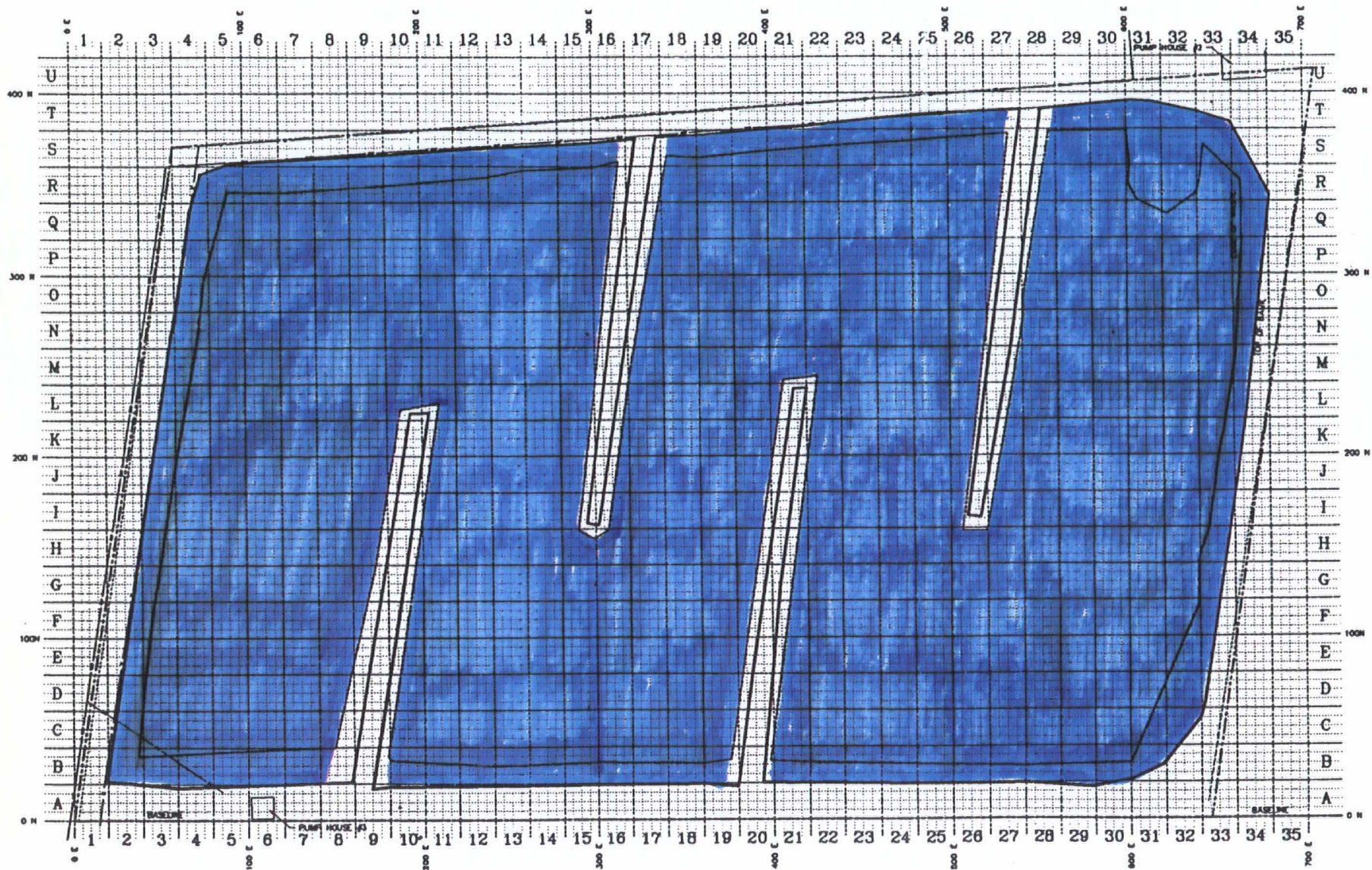
Dewatering activities in which free water is continually removed from the retention reservoir as it accumulates will be ongoing throughout the month of March. Free water removal will promote the consolidation of the treated materials and the development of adequate bearing capacity to permit access for delisting sampling. Delisting sampling is tentatively planned to start in mid-April and continue for two to three weeks.

SUMMARY

Treatment of the materials in the retention reservoir has been successfully completed. The results of performance sampling confirm that all materials are within treatment specifications and, therefore, should be adequately treated to achieve successful delisting. The total quantity of treated materials to be delisted will be 34,687 yd³ from the retention reservoir plus the estimated quantities of materials from the remaining hazardous waste units covered by this RCRA closure.

ATTACHMENT A
PROGRESS MAP

KEYSTONE STEEL & WIRE COMPANY
RETENTION RESERVOIR REMEDIATION
PROGRESS MAP
FEBRUARY 25, 1993



RED - REMIX — CUBIC YARDS
BLUE - PASSED **33,527** CUBIC YARDS
GREEN - IN PROGRESS — CUBIC YARDS

ERM-North Central, Inc.

ATTACHMENT B

STATISTICAL PLOTS
(FIGURES 72 THROUGH 80)

Figure 72

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells G4, H4, I4, and I5: November 23, 1992 (Resampled) Cell J4: December 11, 1992 (Resampled)
Cells J3, K3, K4, L4, and M4: December 23, 1992 (Resampled)

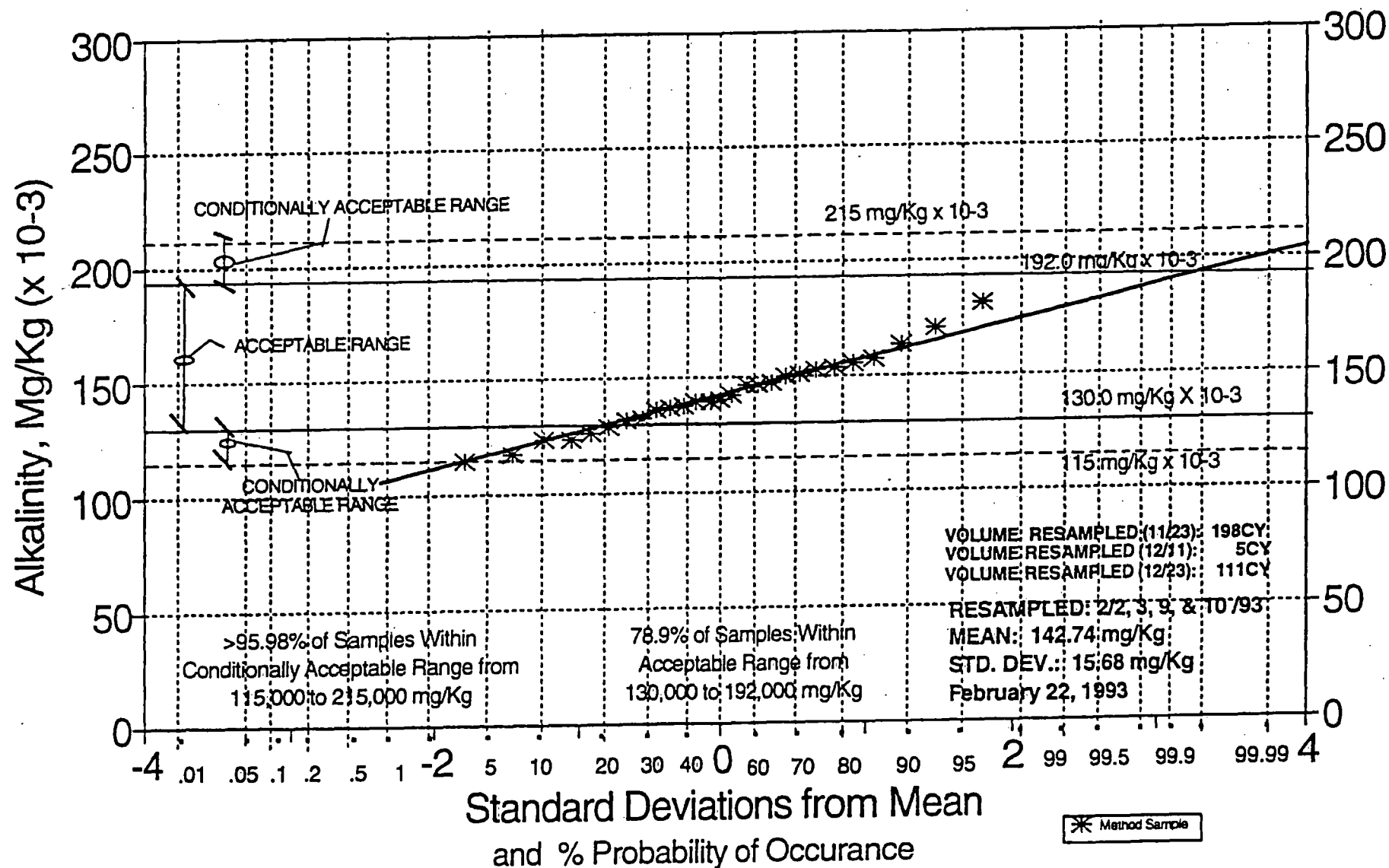


Figure 73

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cell Q25: October 29, 1992 (Resampled) Cells Q30, R28, R29, and R30: October 13, 1992 (Resampled)
 Cells Q29 and P29: December 4, 1992 (Resampled) Cell Q29: October 29, 1992 (Resampled) Cells S29, S30, and S31: January 27, 1993 (Resampled)
 Cells Q31, Q32, and R31: November 23, 1992 (Resampled) Cell R32: January 22, 1993 (Resampled)
 Cells Q33, Q34, R33, R34, S32, and S33: December 17, 1992 (Resampled)

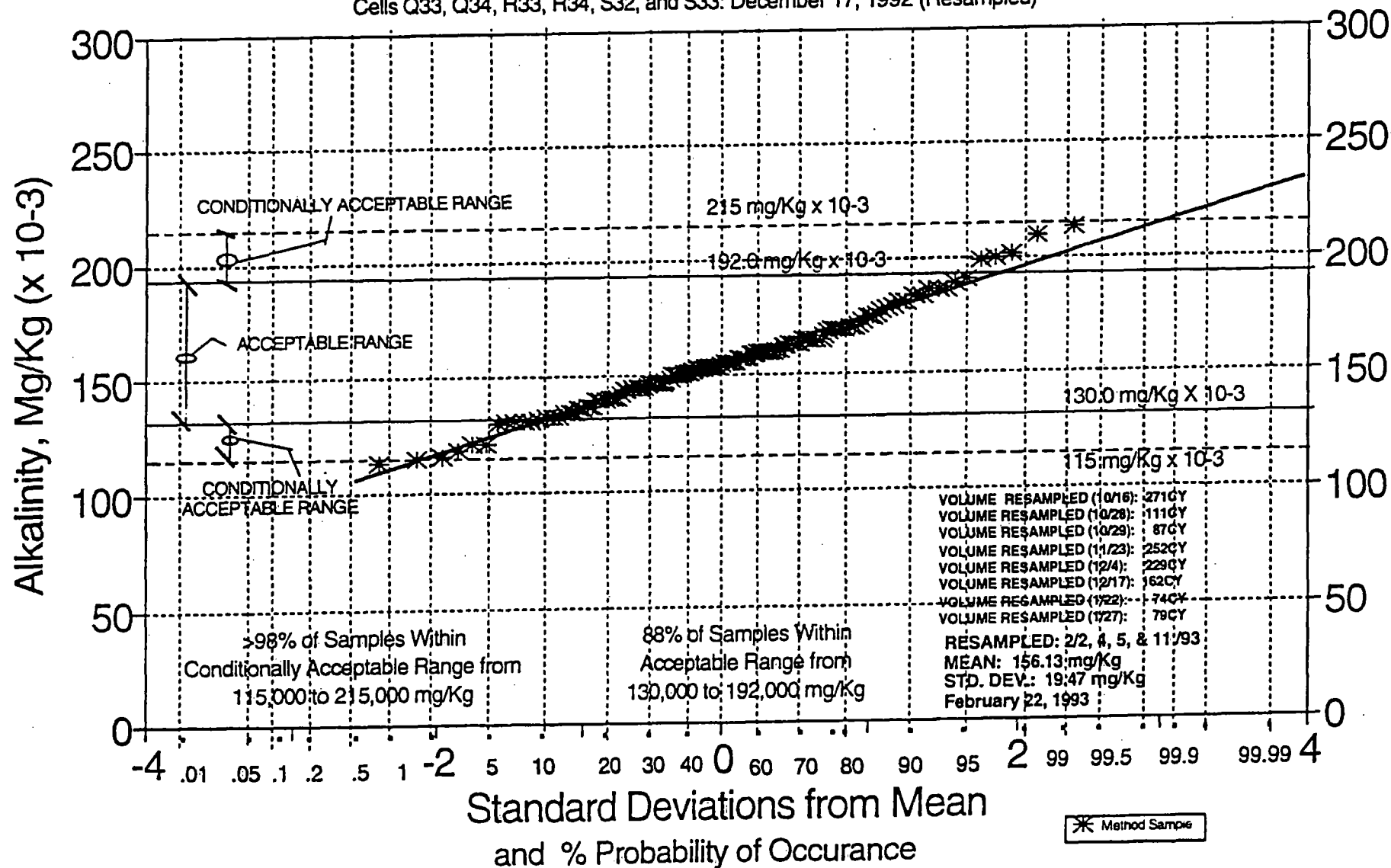


Figure 74
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells O4, P4, Q4, and R4: December 23, 1992 (Resampled) Cells P6 and Q6: December 8, 1992 (Resampled)
 Cell P7: November 23, 1992 (Resampled) Cells Q7 and Q8: December 7, 1992 (Resampled)

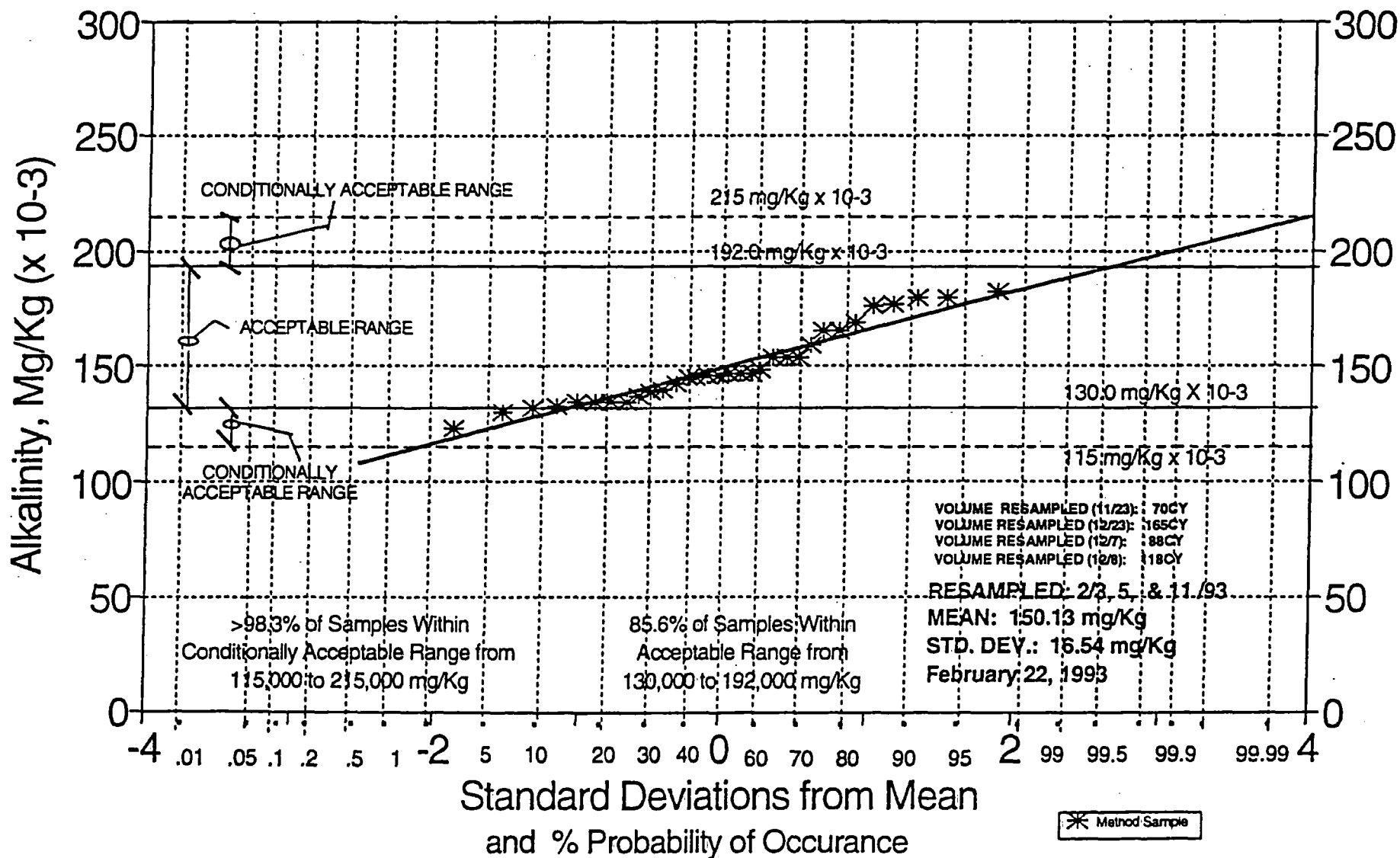


Figure 75

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cell C4: December 23, 1992 Cells D4: December 83, 1992 (Resampled) Cells B5, B6, C5, and C6: January 28, 1993
 Cells D5, E6, E7, F7, and E8: January 8, 1992 (Resampled) Cell F5: November 11, 1992 (Resampled) Cell D6: January 1, 1993 (Resampled)
 Cells B7, C7, B8, and C8: February 5, 1993 Cells D7 and D8: January 14, 1993 (Resampled)
 Cells F8, G8, H8, and H9: December 4, 1992 (Resampled)

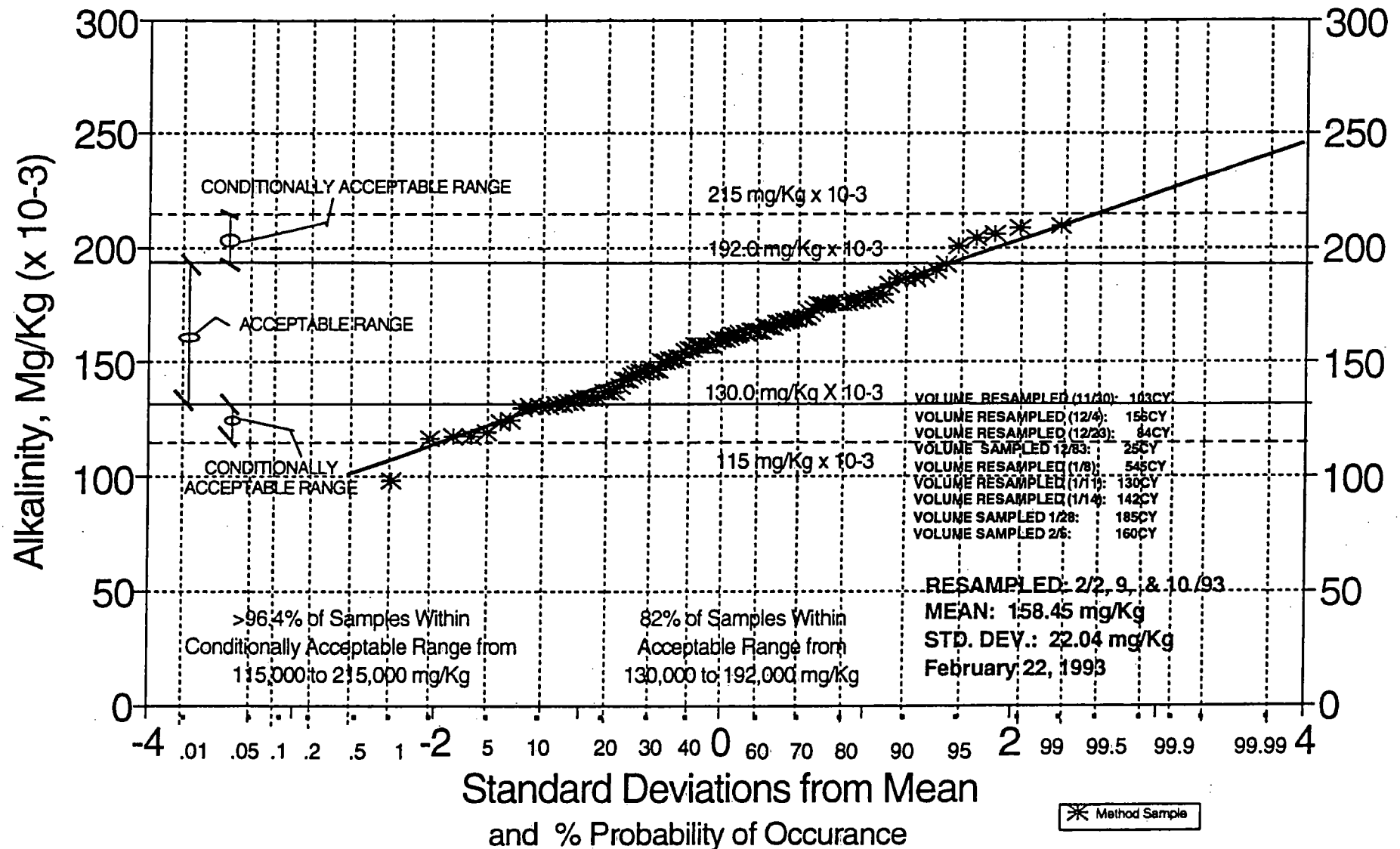


Figure 76
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells B10, B11, B12, B13, B14, B15, B16, B17, B18, and B19 : December 17, 1992 (Resampled)
 Cells C12, C13, C14, C15, C16, C17, C18, and C19: December 17, 1992 (Resampled) Cells B21 and B22: December 14, 1992 (Resampled)
 Cells C21 and C22: November 2, 1992 (Resampled)

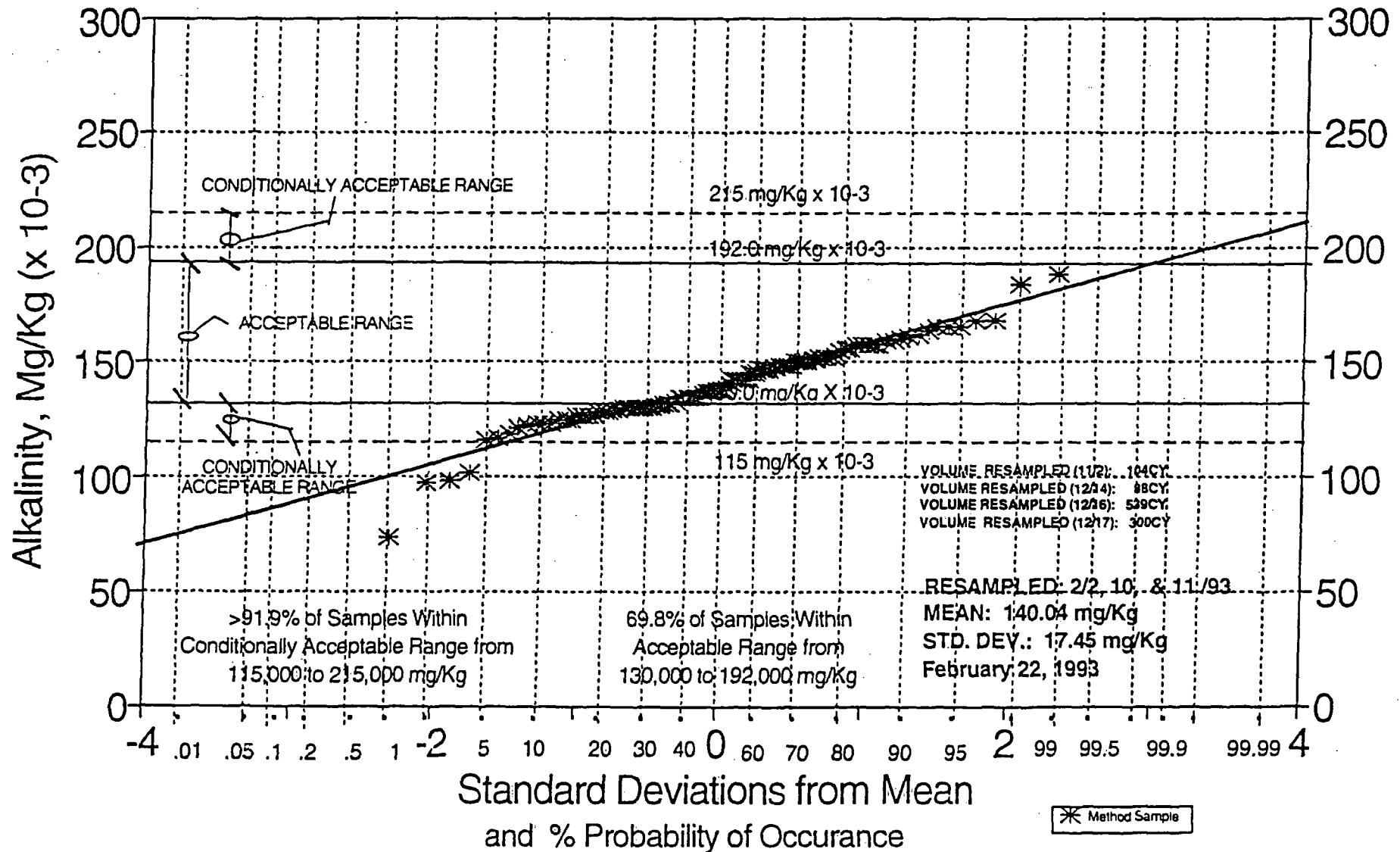


Figure 77
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells Q14, Q15, Q16, R15, and R16 : December 7, 1992 (Resampled)

Cells K15, L15, L17, M15, and M17: December 2, 1992 (Resampled) Cells N15, O15, P15, and P16: November 20, 1992 (Resampled)

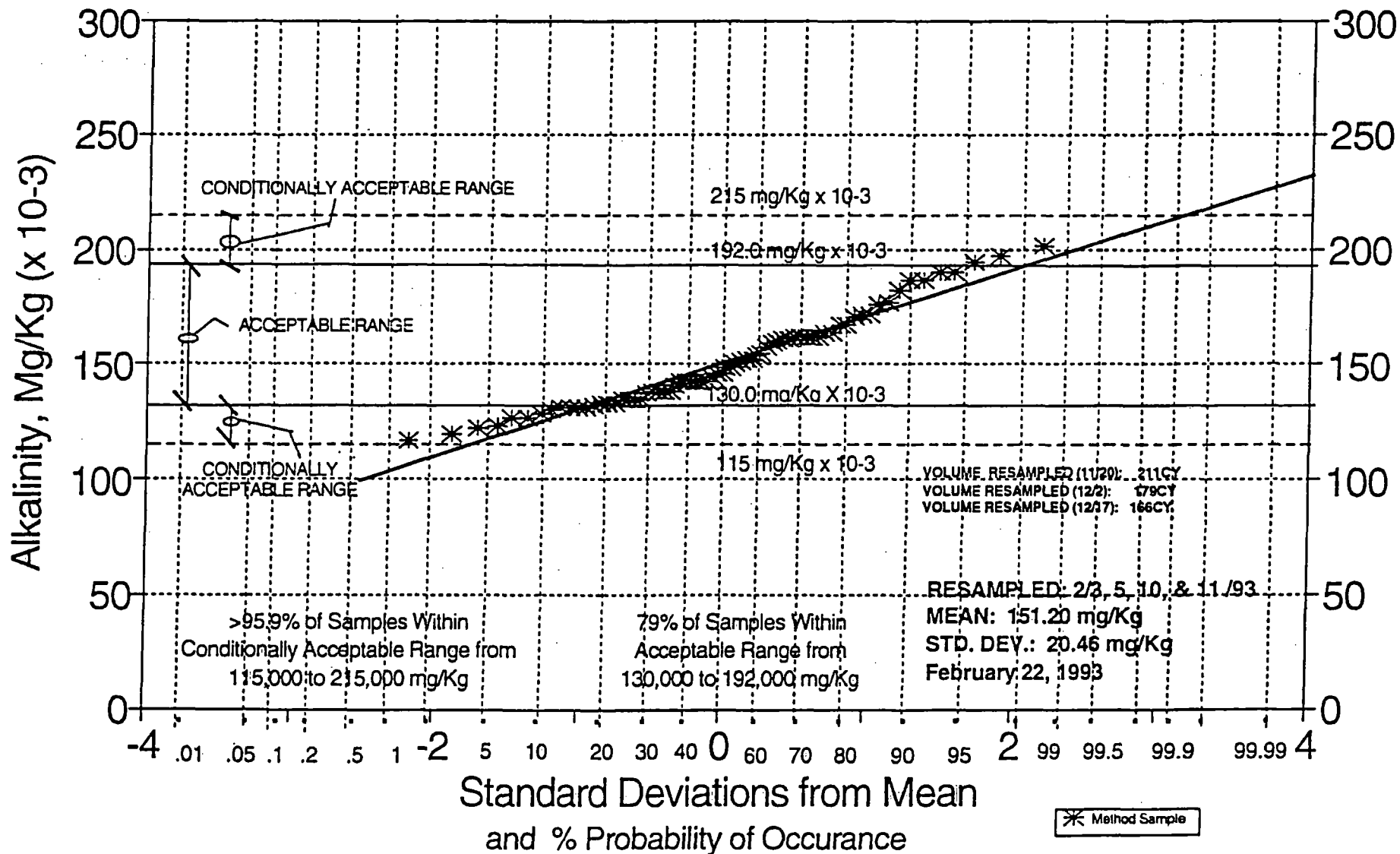


Figure 78
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells F32, G32, G33, and H33 : December 16, 1992 (Resampled)

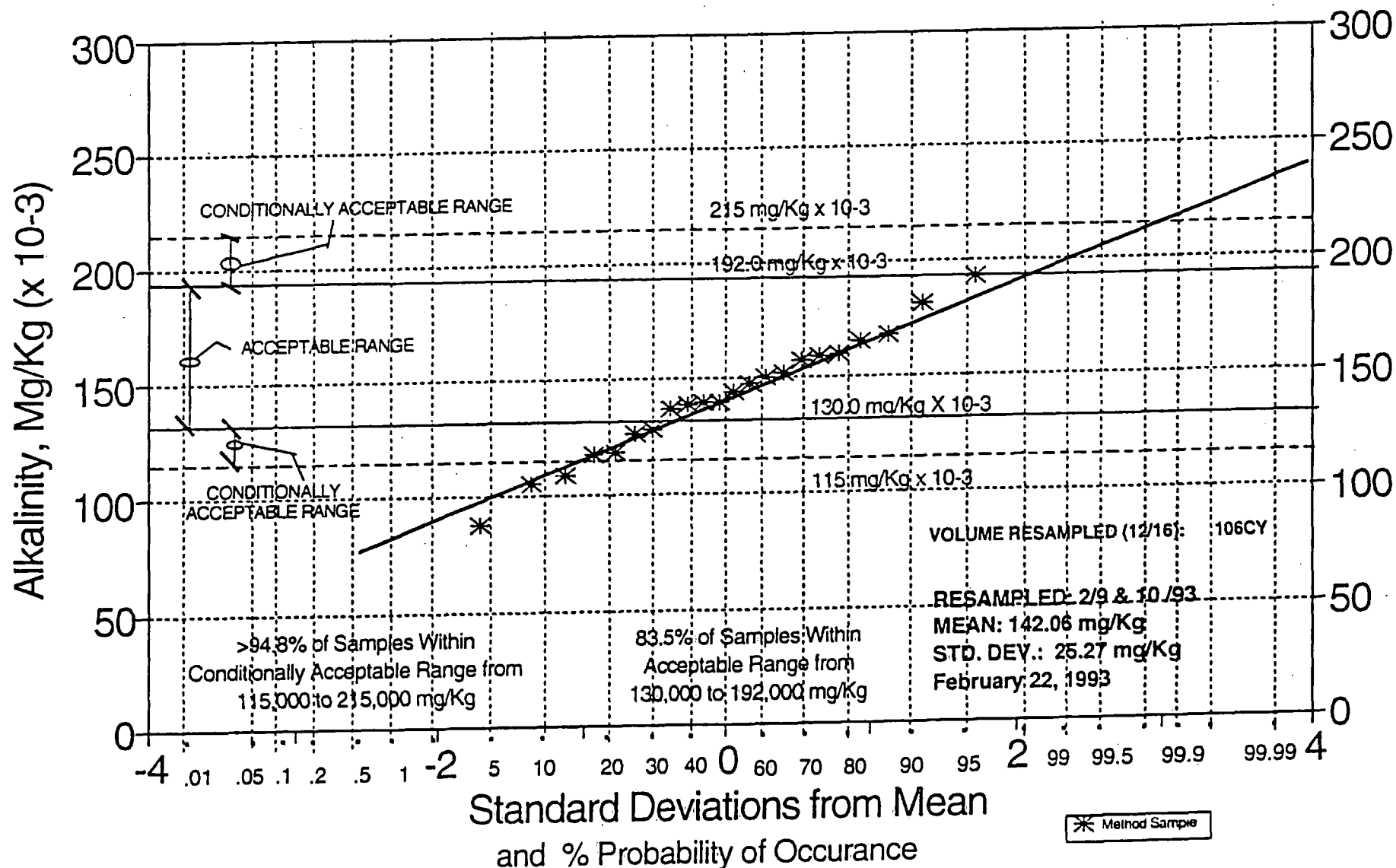


Figure 79
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells G8, F9, G9, and H9: December 4, 1992 (Resampled)

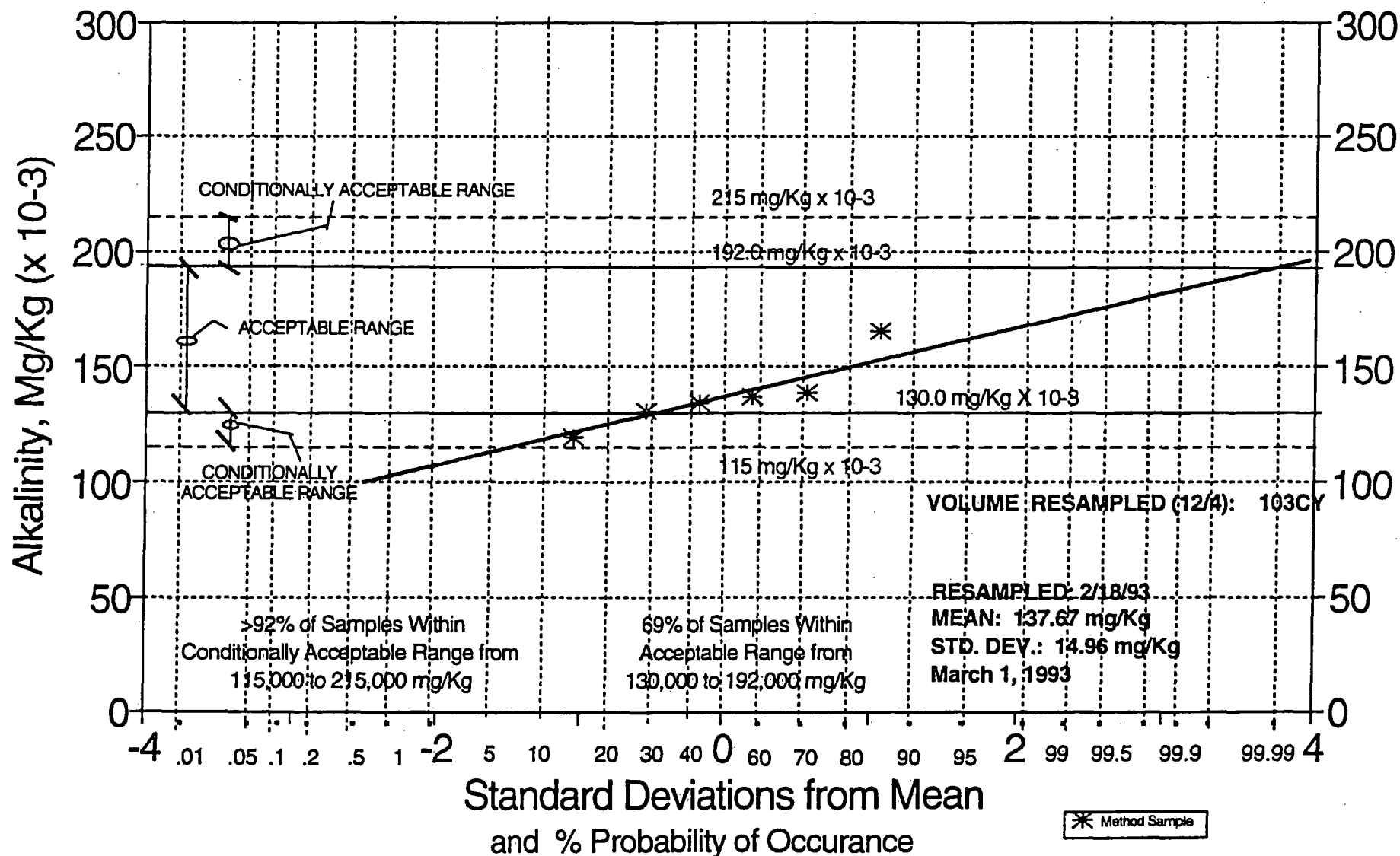


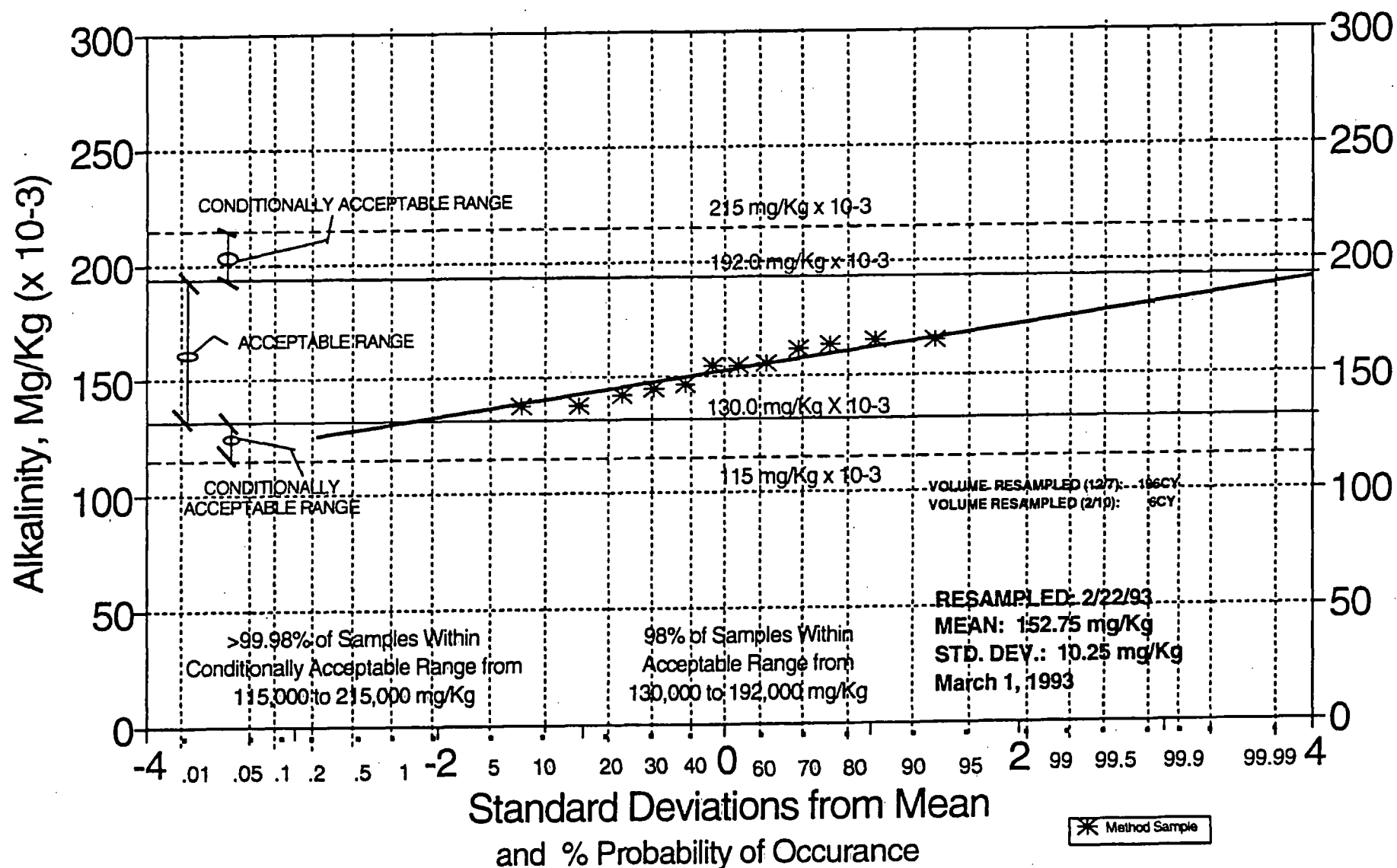
Figure 80

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells Q12, Q13, R13, Q14, and R14: December 7, 1992 (Resampled) Cell R12: February 10, 1992 (Resampled)



**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT**

NOVEMBER 1992

PREPARED BY:

**ERM-NORTH CENTRAL, INC.
112 POINT WEST BOULEVARD, SUITE 10
ST. CHARLES, MO 63301
ERM PROJECT 92136**



cc: Peoria
USEPA

JKH
MLC

ERM-North Central, Inc.

112 Point West Boulevard
Suite 10
St. Charles, MO 63301
314-949-8545
314-949-0524 Fax

A Member of the Environmental
Resources Management Group

December 14, 1992

Lawrence W. Eastep, P.E.
Manager - Permits Section
Division of Land Pollution Control
P.O. Box 19276
Springfield, IL 62794

RE: November Monthly Status Report
Retention Reservoir Remediation
Keystone Steel & Wire - Bartonville, Illinois

Dear Mr. Eastep:

Enclosed are three copies of the November Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at 314/949-8545 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.



Elton D. Breland, P.E.
Sr. Project Manager

DBG
Enclosures

RECEIVED

DEC 18 1992

IEPA-DLPC

**RETENTION RESERVOIR RETENTION
MONTHLY STATUS REPORT
NOVEMBER 1992**

INTRODUCTION

Treatment activities have proceeded throughout the month of November with no major change in the procedures developed in September 1992. These improved procedures for mixing and blending relatively large quantities of materials (up to 500 yd³) plus the implementation of preblending, lateral mixing, and final blending is still proving successful. The results of treatment efforts during November continue to show that the variability of alkalinity from individual grab samples can be effectively controlled.

TREATMENT VOLUMES

The locations of all cells treated from the beginning of the project through November 29, 1992 are shown on the color-coded Progress Map included as Attachment A. The areas in red (representing 634 yd³) designate those materials treated during performance trials from the end of July up through September 4, 1992 that still need to be addressed. All these materials will be subject to retreatment to meet the revised treatment guidelines developed in September, 1992.

Using the revised treatment guidelines, the total acceptably treated materials through November 29, 1992 is 15,991 yd³ (blue designated areas) of which 7,942 yd³ were generated during the month of November. On November 29, 1992, a total of 11,554 yd³ of treated materials (designated as green) had an "In Progress" classification (treated, but not sampled or treated unsatisfactorily and schedule for remixing or retreatment). In addition, 1,070 yd³ of treated materials (designated as pink) had been designated as acceptable (blue), but subsequent activities have disturbed these materials. These disturbed materials are schedule to be resampled to confirm their acceptance. Therefore, a total of 28,615 yd³ has been

treated using the revised treatment guidelines, or approximately 75% of the total materials present.

ANALYTICAL RESULTS

Under the revised treatment requirements with an acceptable alkalinity range of 130,000 to 192,000 mg/kg, a conditionally acceptable alkalinity range of 115,000 to 215,000 mg/kg, and a TCLP lead concentration of <0.218 mg/l as discussed in the September Monthly Status Report, 15,991 yd³ of acceptably treated material has been generated by November 29, 1992.

Statistical plots of all alkalinity data for performance samples taken from November 2 through November 29 are shown in Figures 17 through 28, and included as Attachment B. These plots show conclusively that the problem of controlling the additive dosage level to consistently maintain alkalinities within the acceptable and conditionally acceptable ranges has been solved. As shown in Figures 1 through 16 in the October Monthly Status Report, only four samples exceeded the conditional alkalinity range. In Figures 17 through 28 of this report only two additional samples exceeded the conditional alkalinity range. Overall, only six samples out of a total over 910 samples taken (or 99.3% of all samples) are within the conditionally acceptable range. All six samples failing treatment requirements were located close to the edge of the zone being treated, and is a result of the partially treated edge problem experienced in August 1992. These areas will be or have been remixed/re-treated when adjacent materials are/were treated. All samples within the conditional and acceptable alkalinity ranges have TCLP lead levels <0.218 mg/l.

PROJECT SCHEDULE

The necessity for more restrictive treatment requirements and the need for extensive efforts in blending/mixing to comply with the necessary narrow alkalinity range continue to require ITEX to devote substantial manhours and time to treatment efforts that were not anticipated at the beginning of the project. These extra efforts continue to adversely

impacted the project schedule. In order to maximize production, ITEX continued to implement a two-team two-shift operation throughout the month of November. In addition, a winterization program was implemented by Keystone in October to allow operations to continue under relatively cold conditions. With these provisions in place and the lack of extreme weather conditions, ITEX was able to continue operations through November without a major shutdown. It now appears that treatment may be completed prior to Christmas with final performance sampling lagging behind by three to four days. Any retreatment is expected to be minor and is scheduled after the beginning of 1993. Weather permitting, completion of all treatment activities are scheduled for the end of January 1993. A careful evaluation of the impact of winter on the completion of the project will be ongoing.

SUMMARY

The results of performance sampling through the month of November continues to demonstrate that adequate in-place treatment is achievable. The production rate, under the current operation, continues at 500 to 700 yd³ per day.

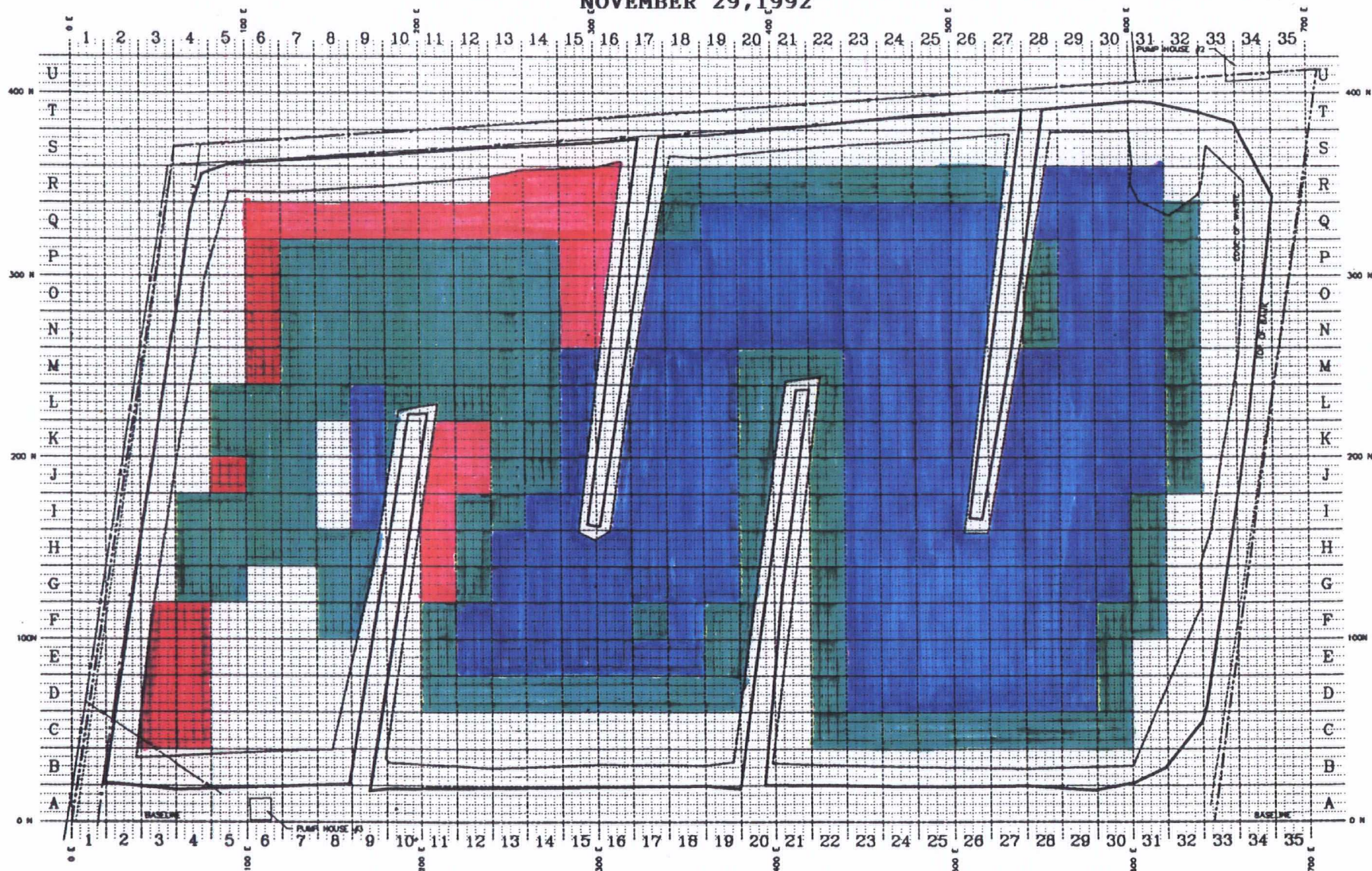
DBG

ATTACHMENT A

PROGRESS MAP

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
RETENTION RESERVOIR REMEDIATION
PROGRESS

NOVEMBER 29, 1992



PINK - DISTURBED PASSING MATERIAL 1070 CUBIC YARDS

RED - REMIX 634 CUBIC YARDS

BLUE - PASSED 15,991 CUBIC YARDS

GREEN - IN PROGRESS 11,554 CUBIC YARDS

ERM-North Central, Inc.

ATTACHMENT B

STATISTICAL PLOTS
(FIGURES 17 THROUGH 28)

Figure 17

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells P-19 and P-20: November 2, 1992 Cell P-22: November 3, 1992

Cell P-24: October 29, 1992

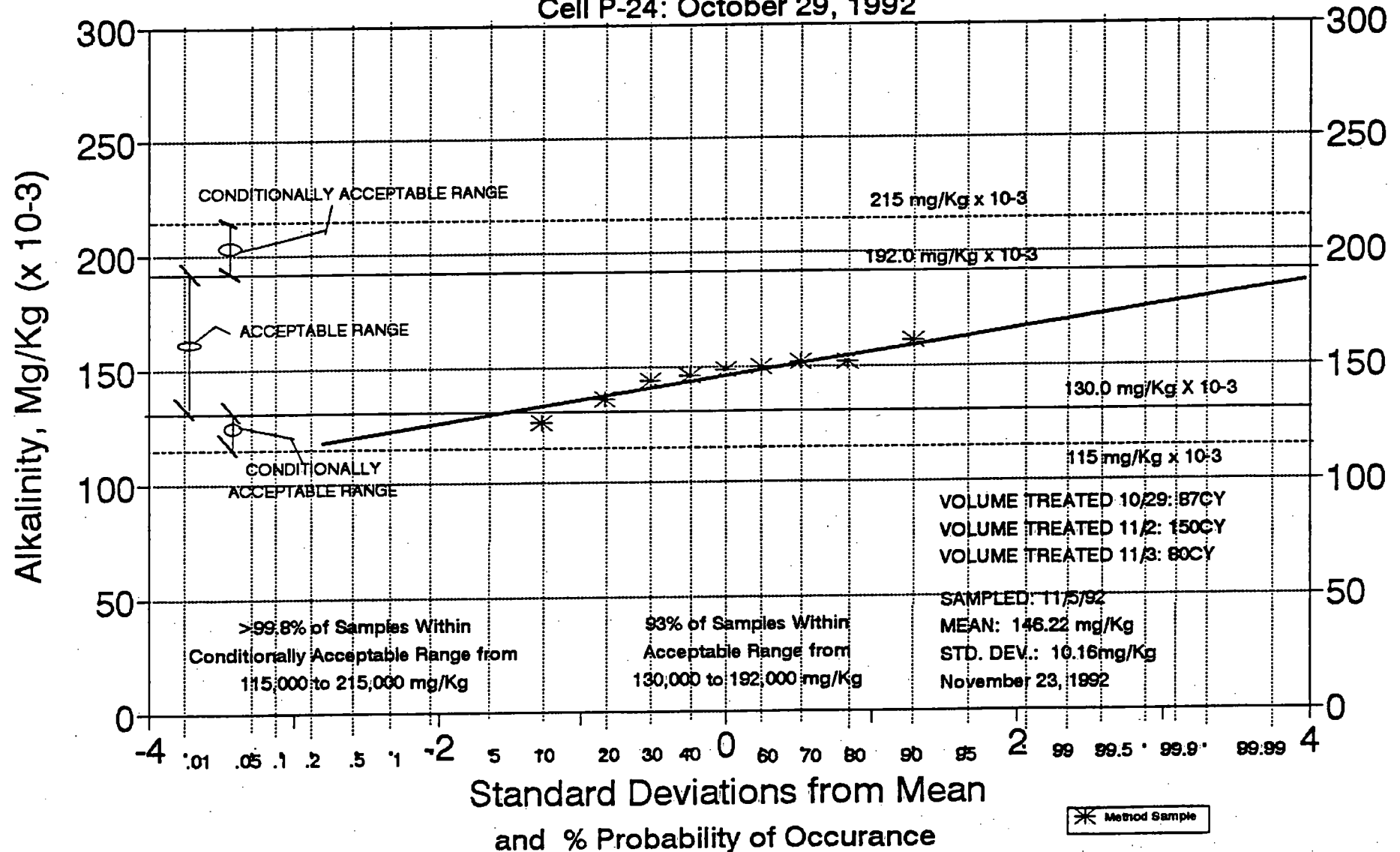


Figure 18

KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of
Cell D-27, D-28, and D-29: October 31, 1992

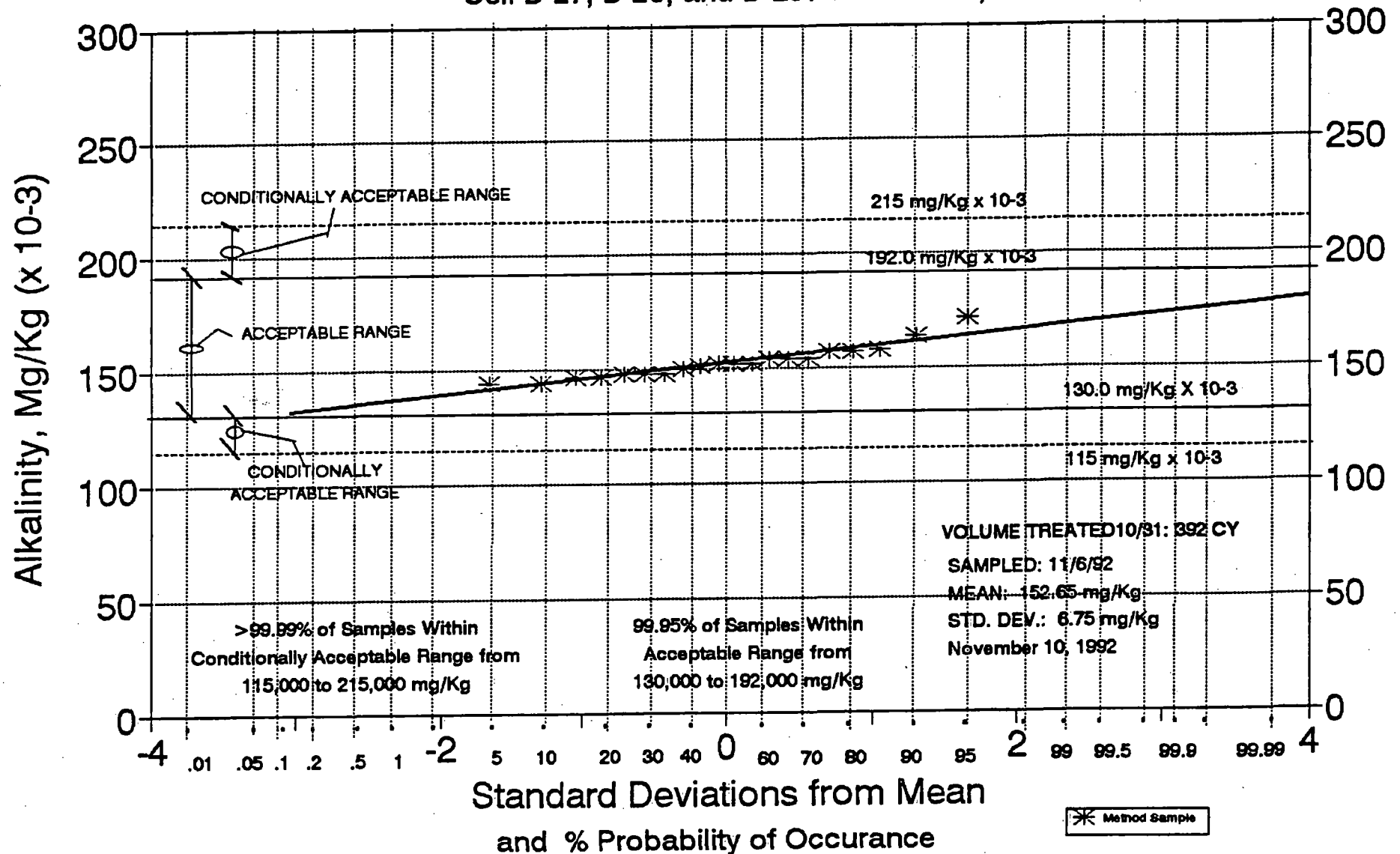


Figure 19

KEYSTONE STEEL & WIRE Retention Reservoir Remediation Variability in Alkalinity Subsequent to Treatment of

Cells D23, D24, D25, D26, E23, E24, E25, E26, E27, and E-28: October 31, 1992

Cell E29: October 16, 1992

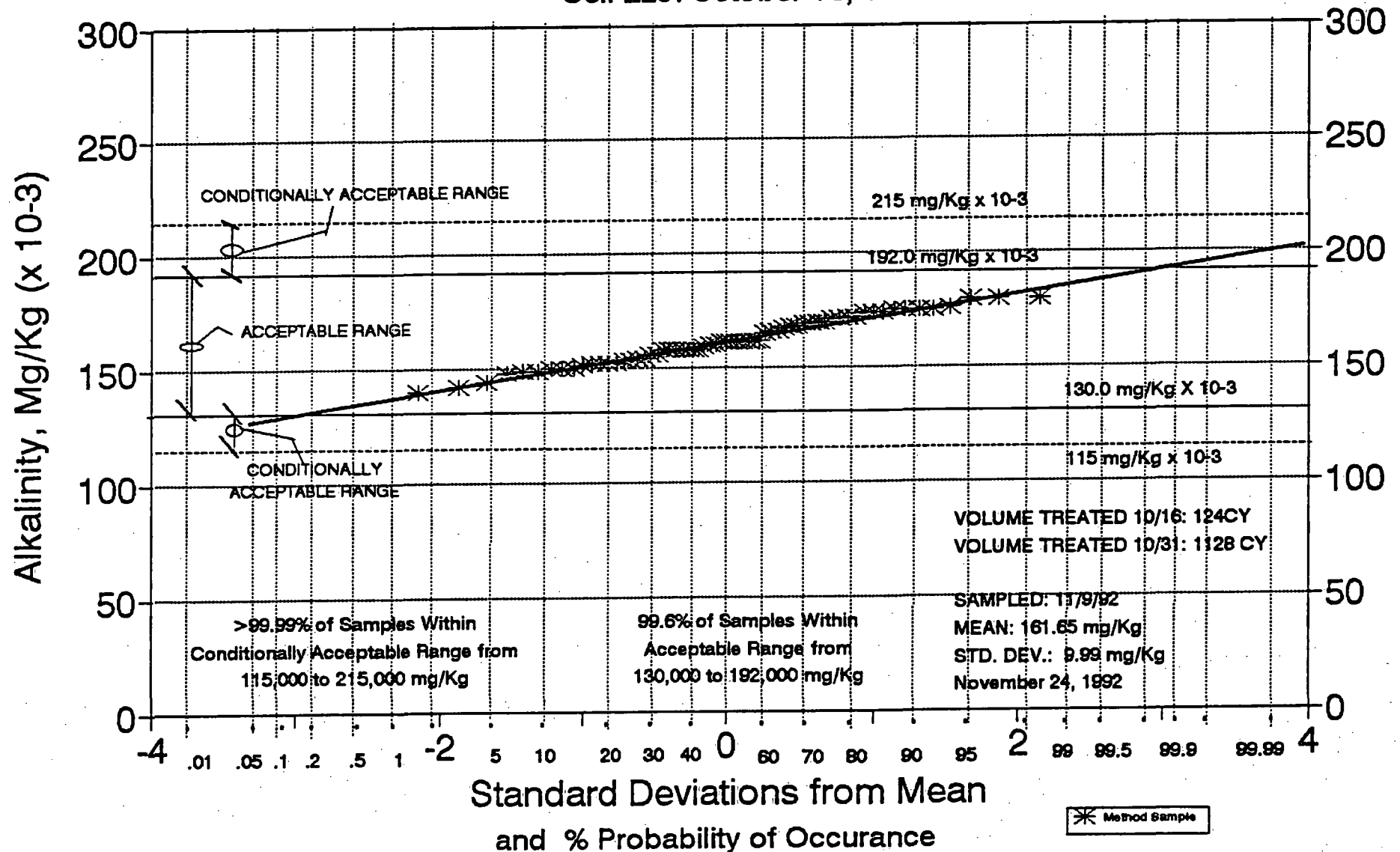


Figure 20
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells P19 and P20: November 2, 1992 Cells P21 and P22: November 3, 1992
 Cells P23 and P24: October 29, 1992 Cell O24: October 24, 1992
 Cells M25 and N25: October 26, 1992 Cells O25 and P25: October 27, 1992

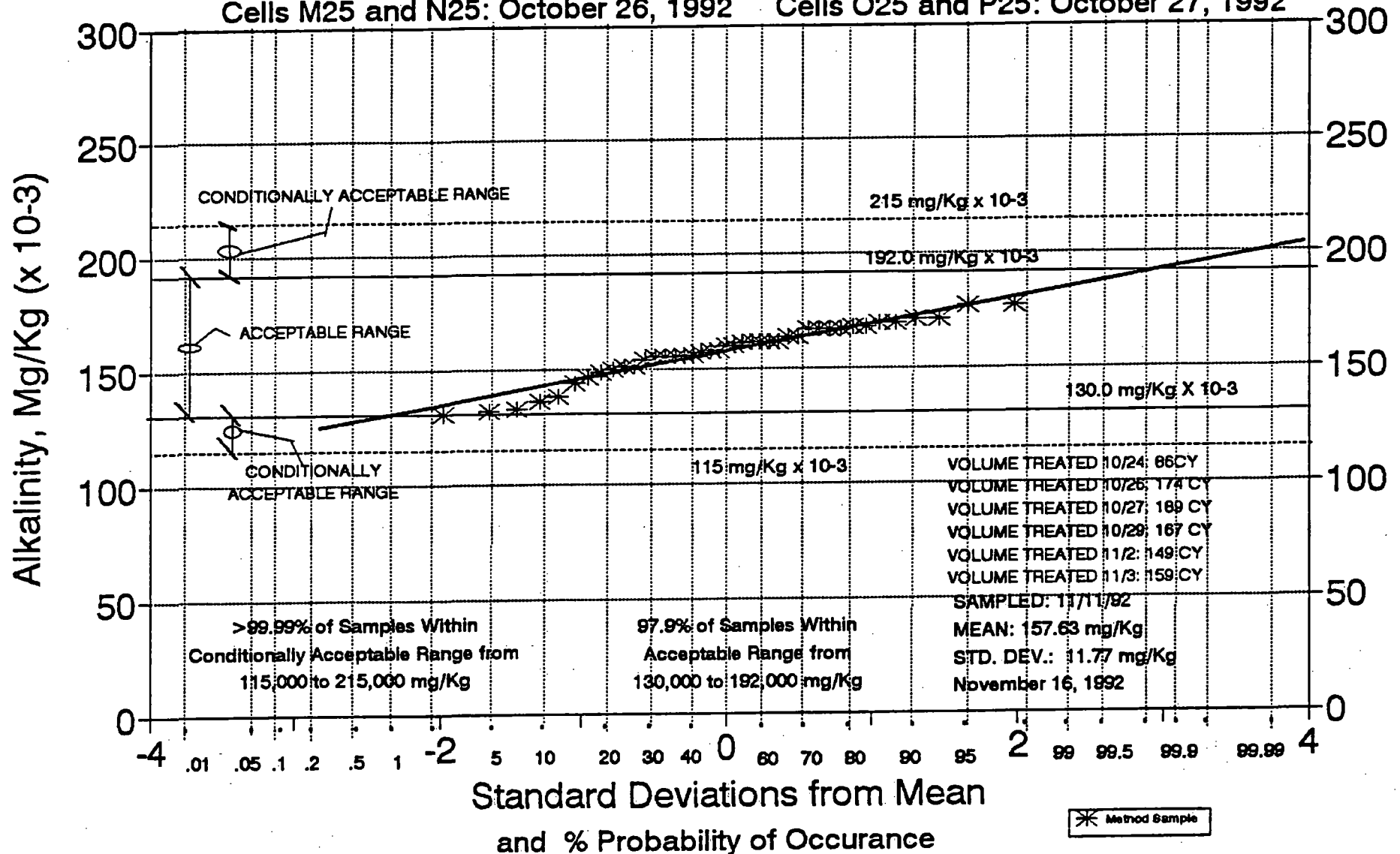


Figure 21
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells K25 and L25: November 5, 1992 Cell J28: October 31, 1992

Cell K28: October 30, 1992 Cells J29 and k29: October 15, 1992

Cells O25, P29, and Q29: October 28, 1992

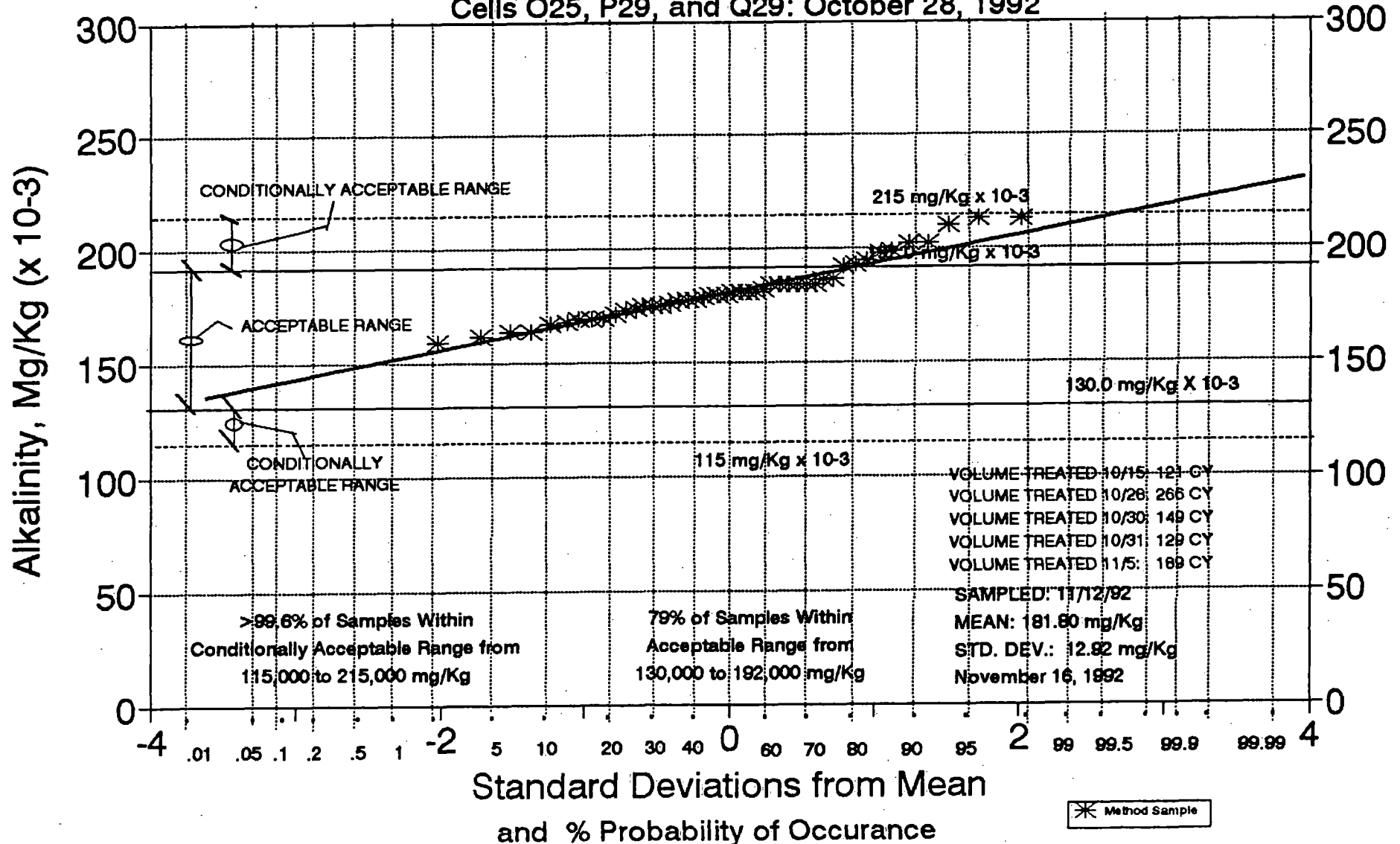


Figure 22
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells O19 and O20: November 2, 1992 Cell J28 and J24: October 27, 1992
 Cell Q24 and Q25: October 29, 1992 Cells G30 and J31: November 3, 1992
 Cell J30: October 15, 1992

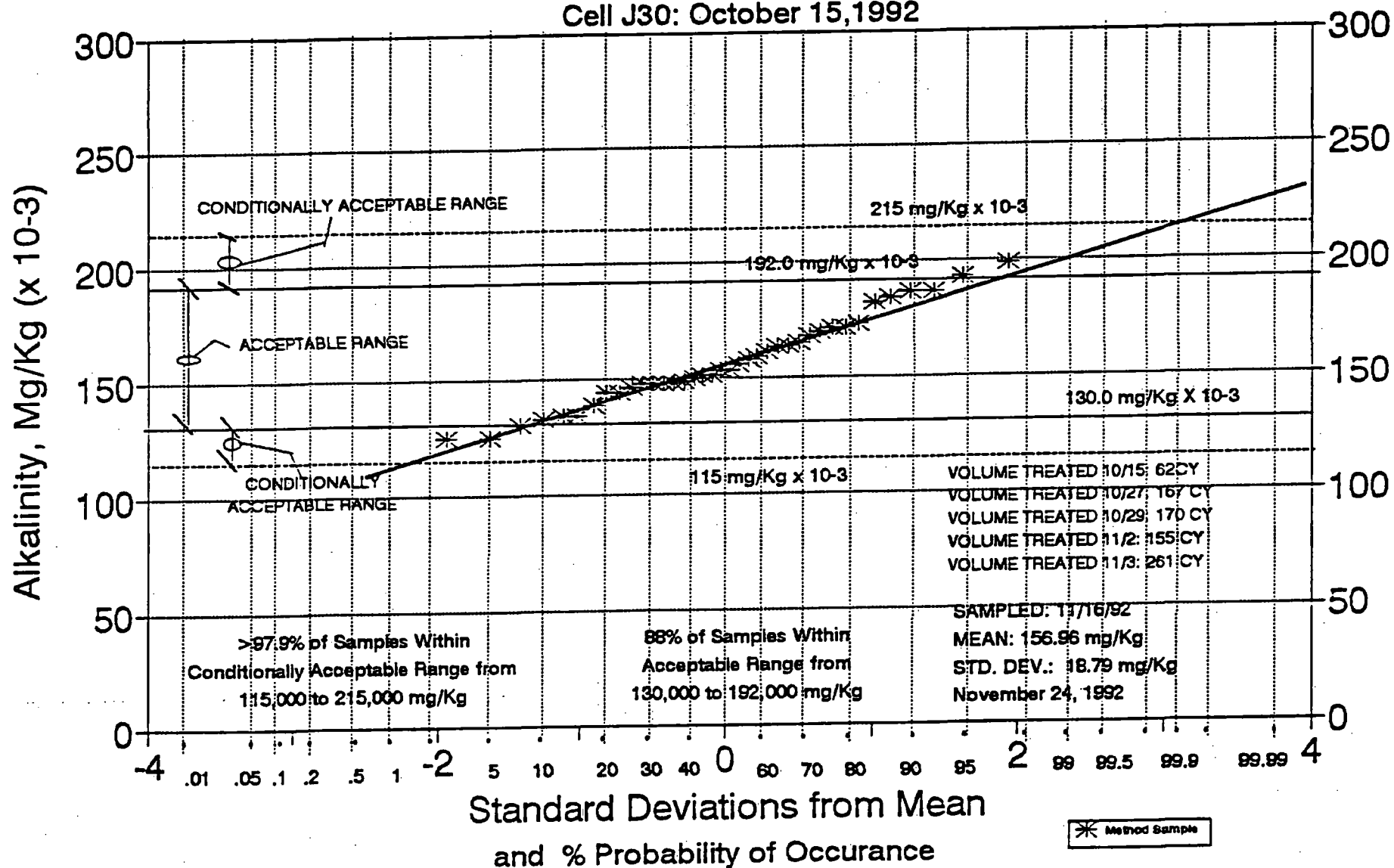


Figure 23
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells G19, H19, I19, J19, K19, L19, and M19: November 5, 1992 Cell N19 and N20: November 6, 1992
 Cell O20: November 2, 1992 Cell O21 and O22: November 3, 1992
 Cell O23: October 29, 1992

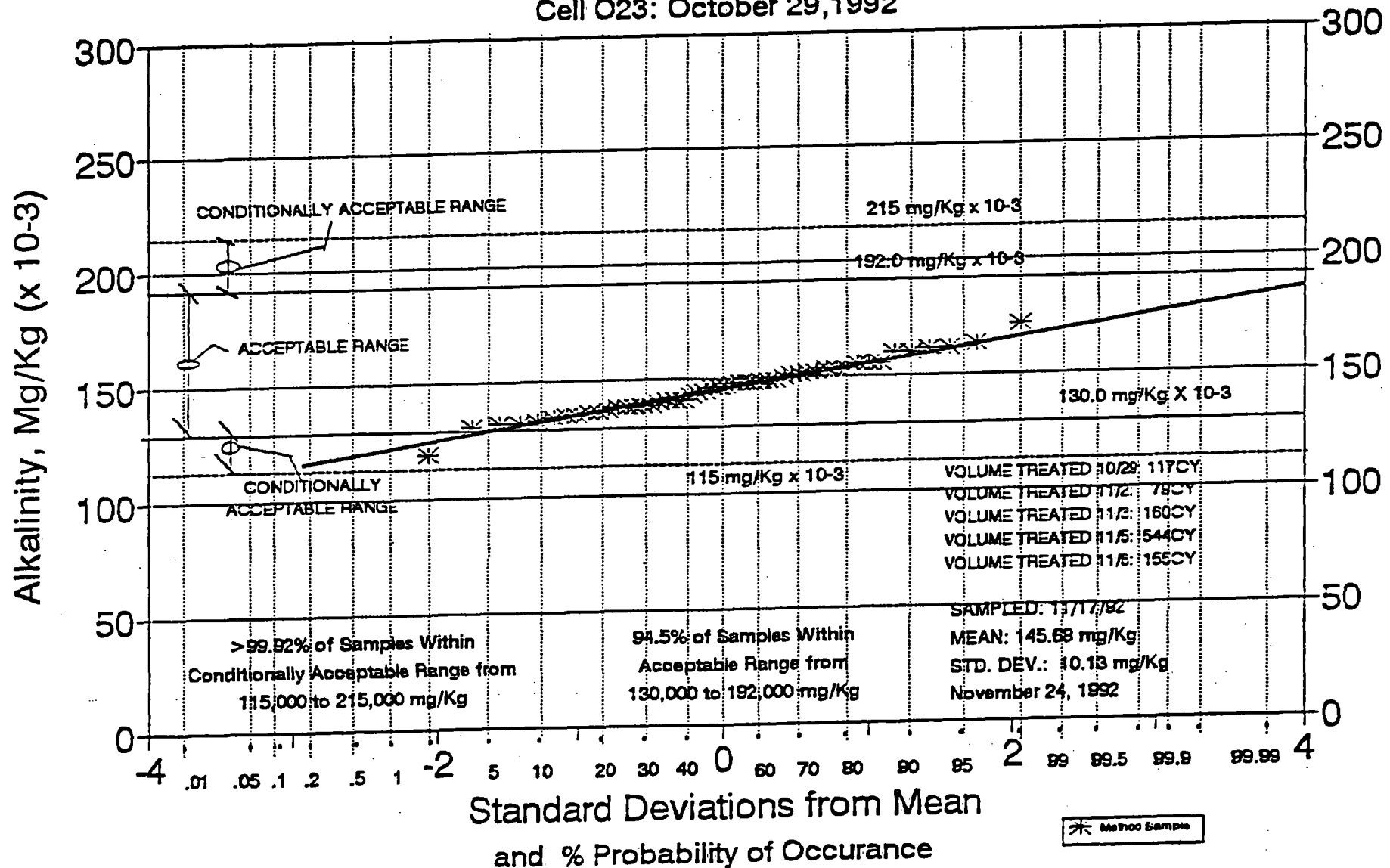


Figure 24
KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of

Cells Q19, Q20, Q21, and Q22: October 30, 1992

Cell Q23: October 29, 1992

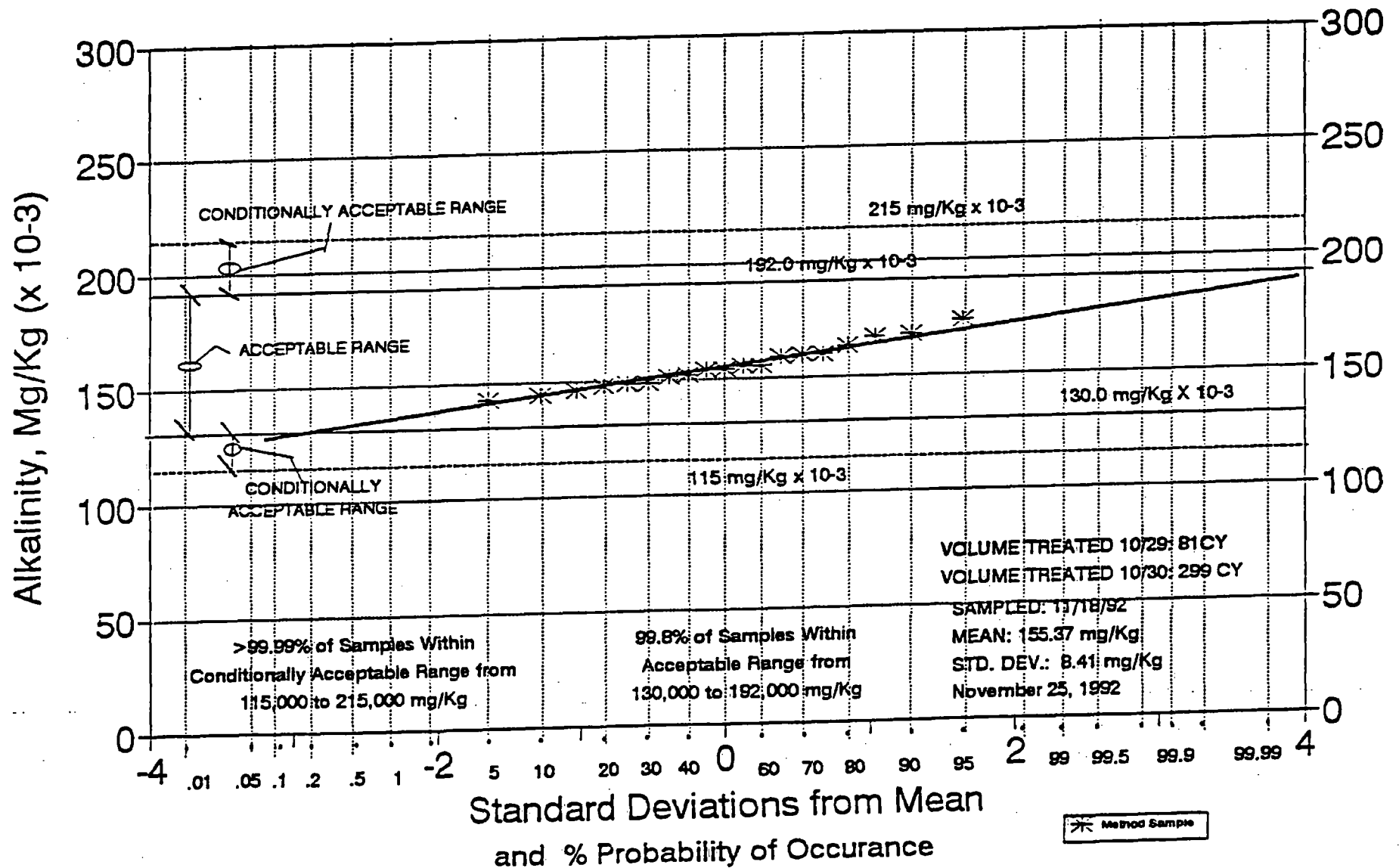


Figure 25
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells G17 and G18: November 12, 1992 Cells H17 and H18: November 17, 1992
 Cell I18: November 10, 1992 J18 and K18: November 11, 1992
 Cell L18: November 5, 1992 Cells M18 and N18: November 4, 1992

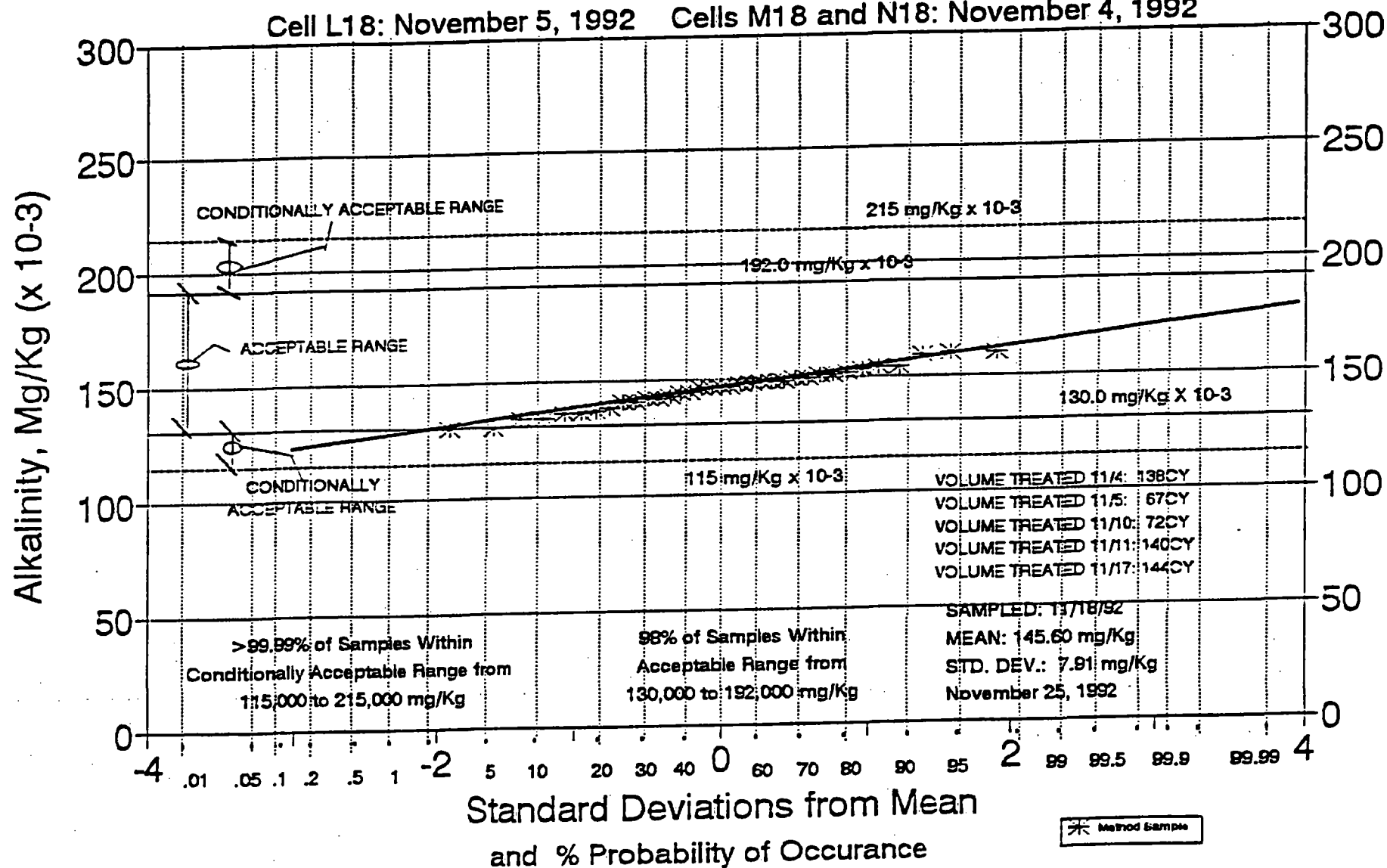


Figure 26

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells E14, F14, E15, F15, E16, F16, E18, and F18: November 9, 1992

Cells E12, F12, E13, and F13: November 10, 1992 Cells G16, E17 and F17: November 11, 1992

Cells G13, H13, G14, H14, G15, and G16: November 12, 1992

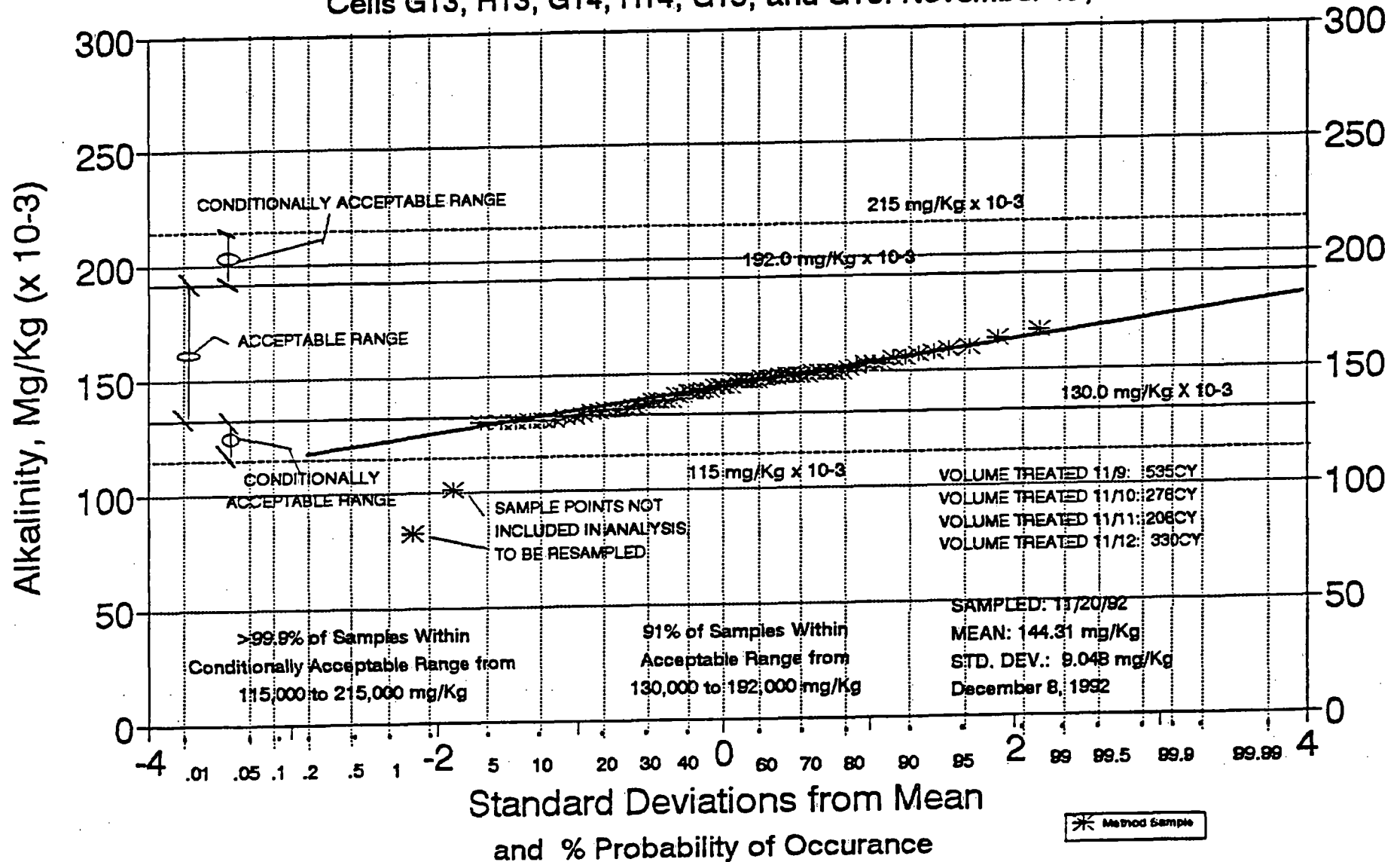


Figure 27
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cells H25, H26, and H27: November 4, 1992

Cells I25, J25, J26, K26, L26, M26, N26, O26, P26, and Q26: November 5, 1992

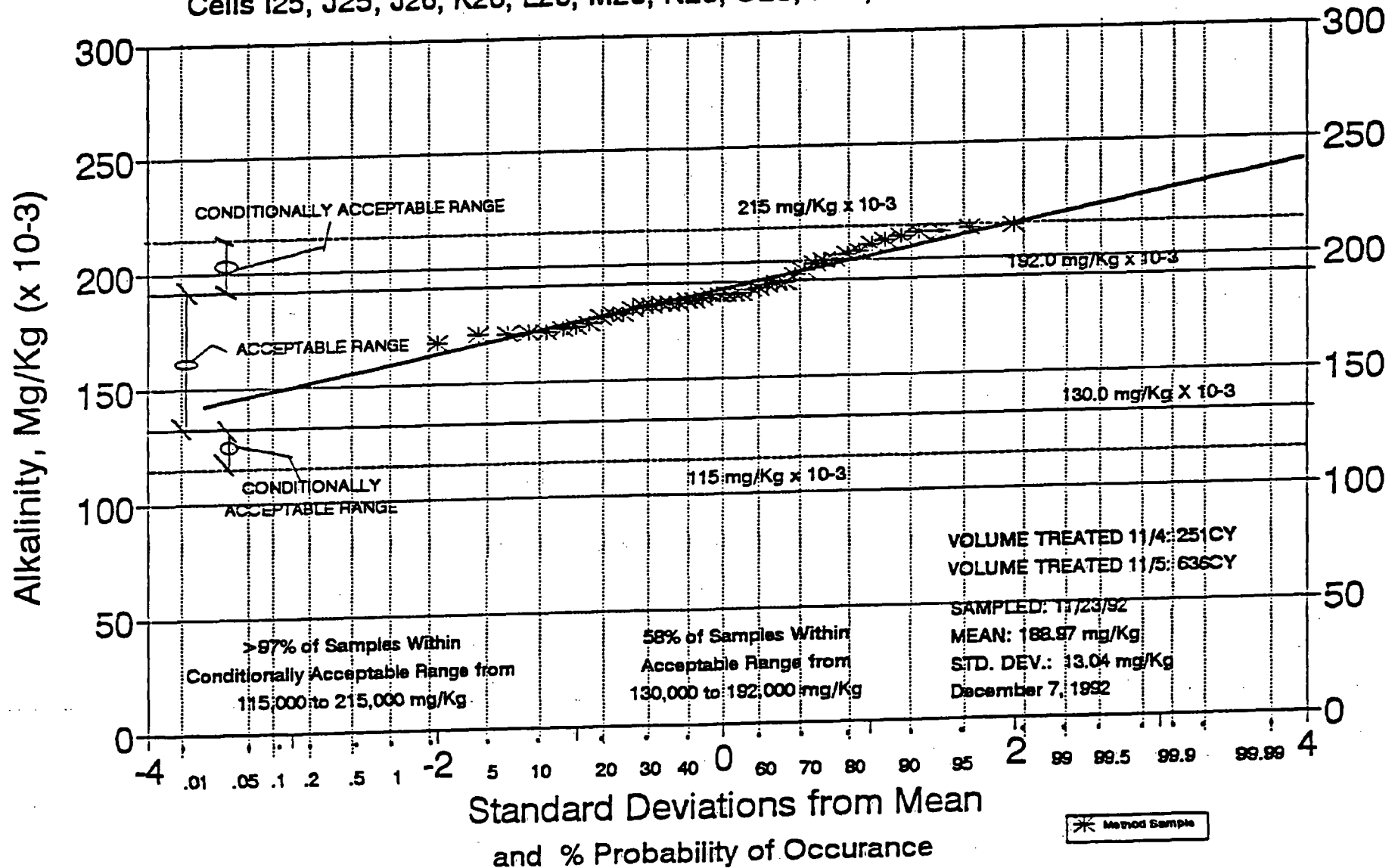
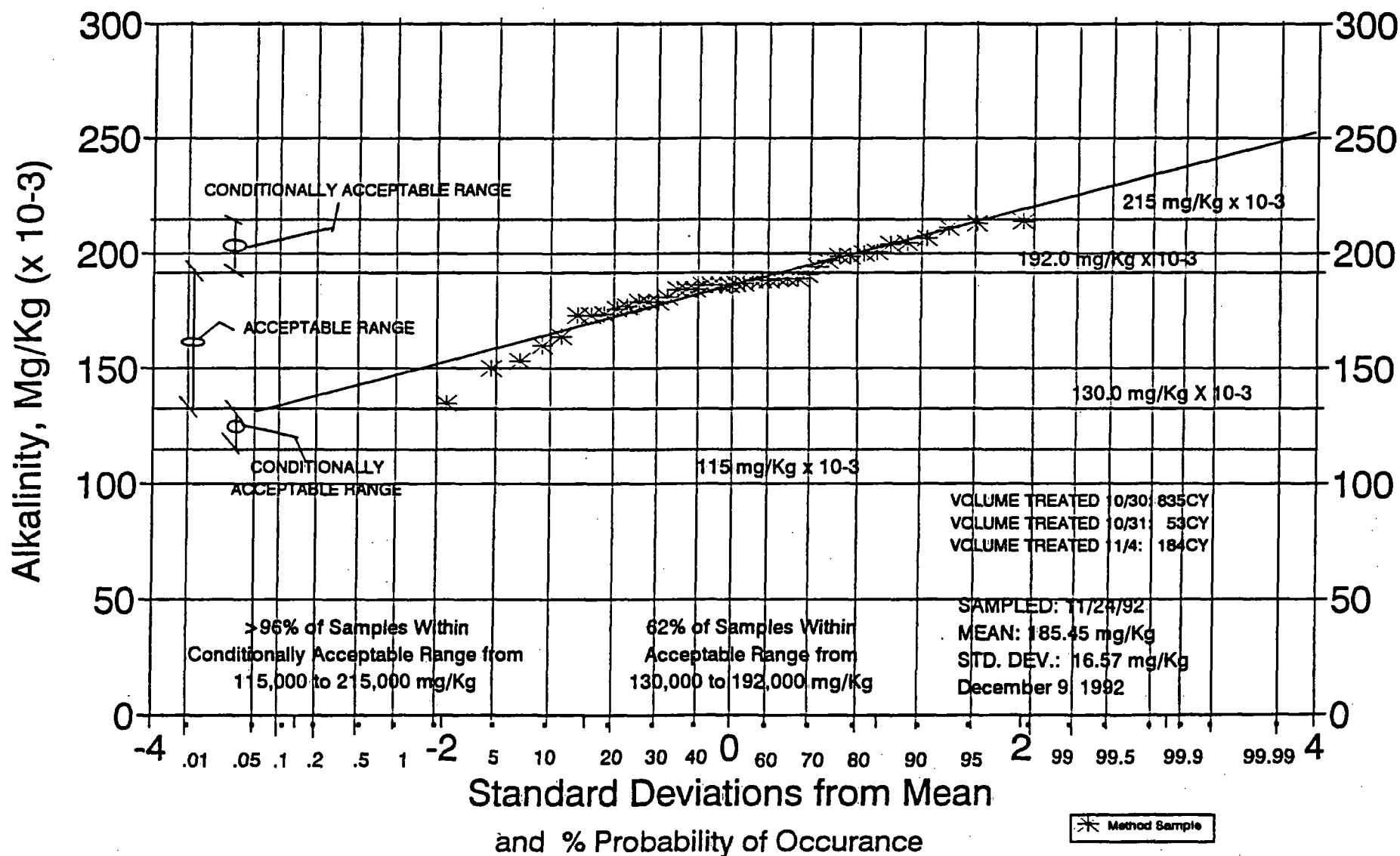


Figure 28
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of

Cell K27, L27, M27, L28, M28, N28, O28, P28, Q28, and P29: October 30, 1992

Cell J27: October 31, 1992 Cells H27 and I27: November 4, 1992



C-521-M-6

**KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS**

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT**

OCTOBER 1992

PREPARED BY:

**ERM-NORTH CENTRAL, INC.
112 POINT WEST BOULEVARD, SUITE 10
ST. CHARLES, MO 63301
ERM PROJECT 92136**



ERM-North Central, Inc.

112 Point West Boulevard
Suite 10
St. Charles, MO 63301
314-949-8545
314-949-0524 Fax

cc: Peoria
USEPA

JKM
MC

A Member of the Environmental
Resources Management Group

November 16, 1992

Lawrence W. Eastep, P.E.
Manager - Permits Section
Division of Land Pollution Control
P.O. Box 19276
Springfield, IL 62794

RE: October Monthly Status Report
Retention Reservoir Remediation
Keystone Steel & Wire - Bartonville, Illinois

Dear Mr. Eastep:

Enclosed are three copies of the October Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at 314/949-8545 if you have any questions concerning the content of this report or if you need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.



Elton D. Breland, P.E.
Sr. Project Manager

DBG
Enclosures

RECEIVED
NOV 19 1992
IEPA-DLPC

**RETENTION RESERVOIR RETENTION
MONTHLY STATUS REPORT
OCTOBER 1992**

INTRODUCTION

Treatment activities have proceeded throughout the month of October using the revised procedures developed in September 1992. These improved procedures for mixing and blending relatively large quantities of materials (up to 500 yd³) plus the implementation of preblending, lateral mixing, and final blending is proving successful. The results of treatment efforts during the latter part of September and all of October show that the variability of alkalinity from individual grab samples can be effectively controlled through these new mixing and blending procedures .

TREATMENT VOLUMES

The locations of all cells treated from the beginning of the project through November 1, 1992 are shown on the color-coded Progress Map included as Attachment A. The areas in red (representing 7,647 yd³) designate those materials treated during performance trials from the end of July up through September 4, 1992. All these materials will be subject to retreatment to meet the revised treatment guidelines developed in September 1992.

Using the revised treatment guidelines, the total acceptable treated materials through November 1, 1992 is 8,111 yd³ (blue designated areas) of which 7,611 yd³ were generated during the month of October. On November 1, 1992, a total of 5,625 yd³ of treated materials (designated as green) had an "In Progress" classification (treated, but not sampled or treated unsatisfactorily and schedule for remixing or retreatment). Therefore, a total of 13,736 yd³ had been treated using the revised treatment guidelines, or approximately 36% of the total materials present..

ANALYTICAL RESULTS

Under the revised treatment requirements with an acceptable alkalinity range of 130,000 to 192,000 mg/kg, a conditionally acceptable alkalinity range of 115,000 to 215,000 mg/kg, and a TCLP lead concentration of <0.218 mg/l as discussed in the September Monthly Status Report, 8,111 yd³ of acceptably treated material has been generated by November 1, 1992.

Statistical plots of all alkalinity data for performance samples taken from September 22 through November 1 are shown in Figures 1 through 16, and included as Attachment B. These plots show conclusively that the problem of controlling the additive dosage level to consistently maintain alkalinities within the acceptable and conditionally acceptable ranges has been solved. As shown in Figures 1 through 16, only four samples exceeded the conditional alkalinity range out of a total of 439 samples taken (or 99.1% of all samples are within the conditionally acceptable range). All four samples failing treatment requirements were located close to the edge of the zone being treated, and is a result of the partially treated edge problem experienced in August 1992. These areas will be or have been remixed/re-treated when adjacent materials are/were treated. All samples within the conditional and acceptable alkalinity ranges have TCLP lead levels <0.218 mg/l.

PROJECT SCHEDULE

The necessity for more restrictive treatment requirements and the need for extensive efforts in blending/mixing to comply with the necessary narrow alkalinity range have required ITEX to devote substantial manhours and time to treatment efforts that were not anticipated at the beginning of the project. These extra efforts, along with the two months on performance trials necessary to develop proper procedures, have adversely impacted the project schedule. In order to maximize production, ITEX has implemented a two-team two-shift operation and brought in two sets of barge mats to improve access to untreated areas. In addition, keystone has implemented a winterization program to allow operations to continue under relatively cold conditions. Even with these provisions in place, it is doubtful

that treatment can be completed in 1992. A careful evaluation of the impact of winter on the completion of the project will be ongoing.

SUMMARY

The results of performance sampling through the month of October demonstrates that adequate in-place treatment is achievable. The production rate, under the current operation, appears to be 500 to 700 yd³ per day. Efforts are continuing to increase the rate of treatment in order to complete the project expeditiously.

EDB/DBG

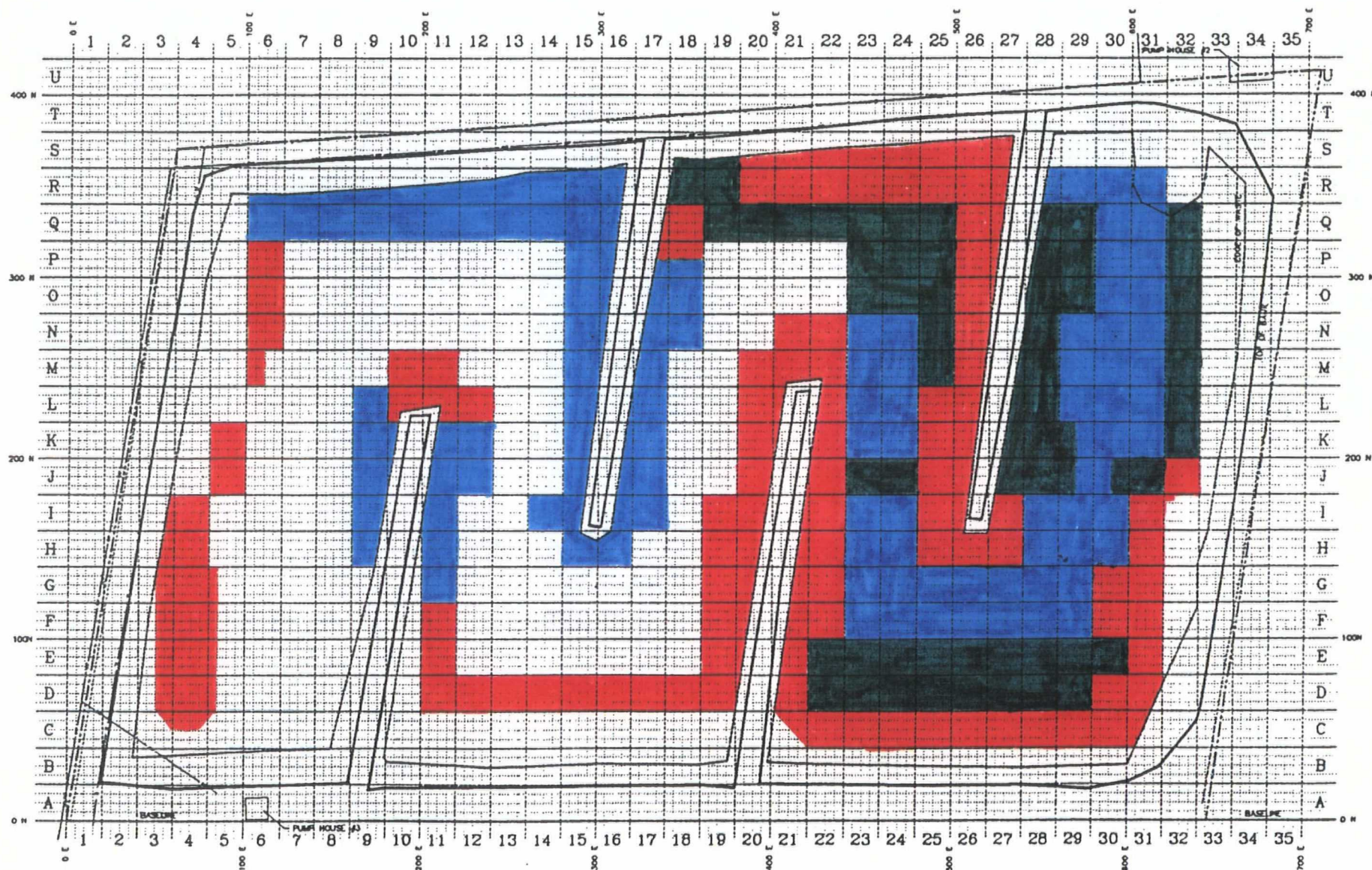
ATTACHMENT A

PROGRESS MAP

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

RETENTION RESERVOIR REMEDIATION
PROGRESS MAP

NOVEMBER 1, 1992



RED - REMIX: 7,647 cubic yards
BLUE - ACCEPTABLE: 8,111 cubic yards
GREEN - IN PROGRESS: 5,625 cubic yards

ERM-North Central, Inc.

ATTACHMENT B

STATISTICAL PLOTS
(FIGURES 1 THROUGH 16)

Figure 1
KEYSTONE STEEL & WIRE
Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of
Cells I9, J9, K9, and L9: Treated September 22, 1992

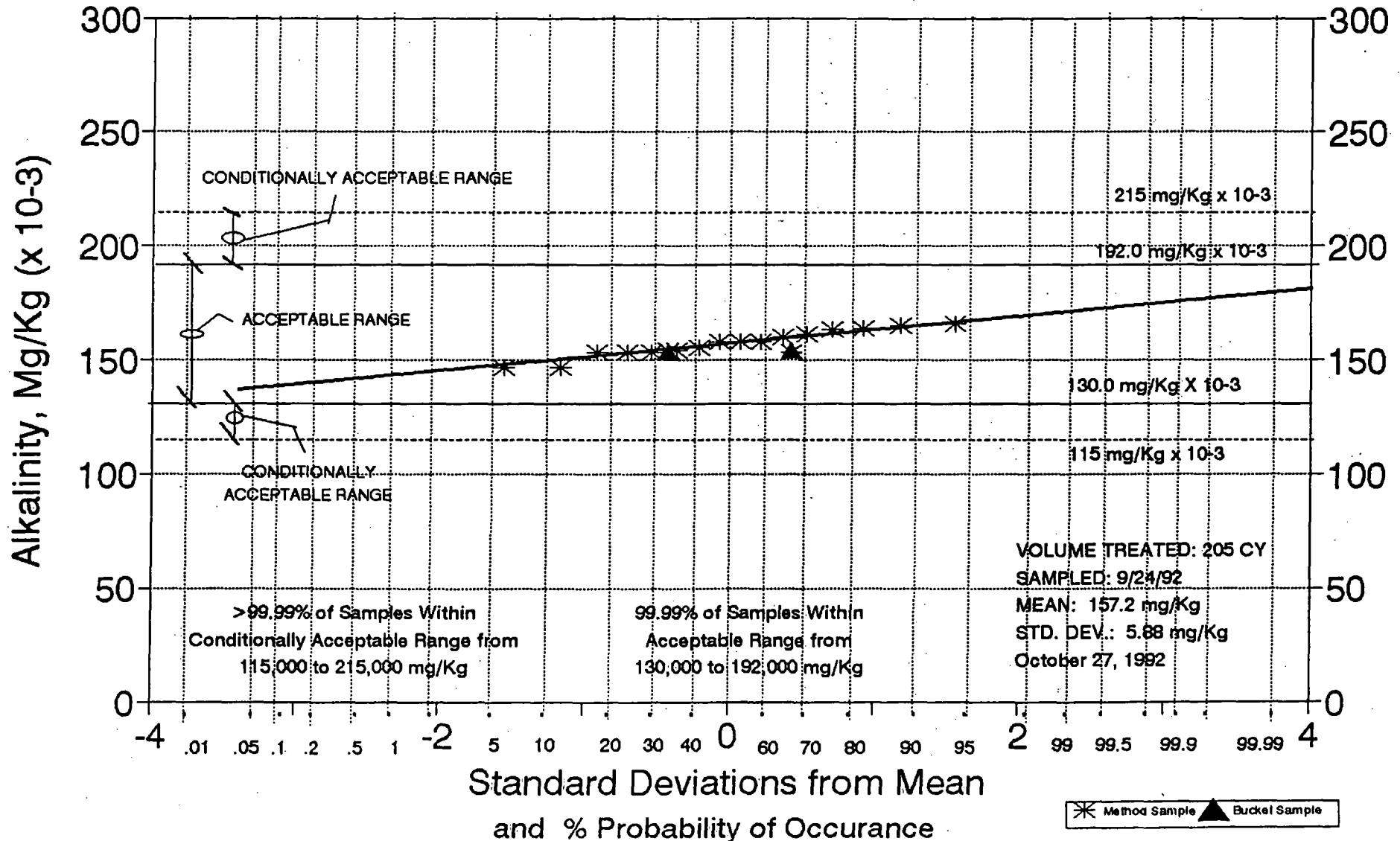


Figure 2
KEYSTONE STEEL & WIRE
Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells G11, H11, I11, J11, K11, J12, and K12: Treated September 23, 1992

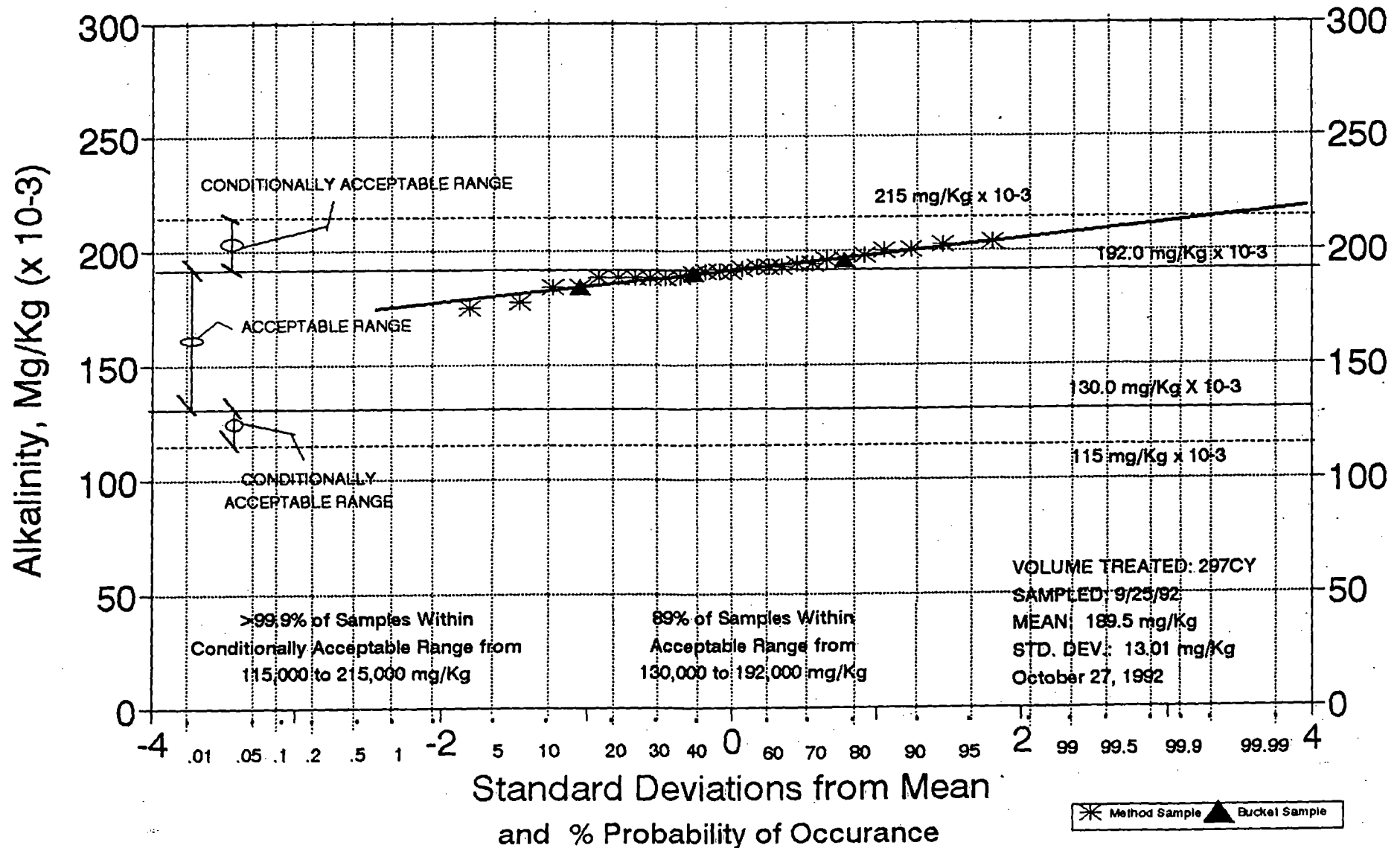


Figure 3

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells I14, H15, I15, H16, I16, J16, K16, I17, J17, and K17 : Treated October 2, 1992

J15, L17, M17, N17, O17, and O18: Treated October 5, 1992

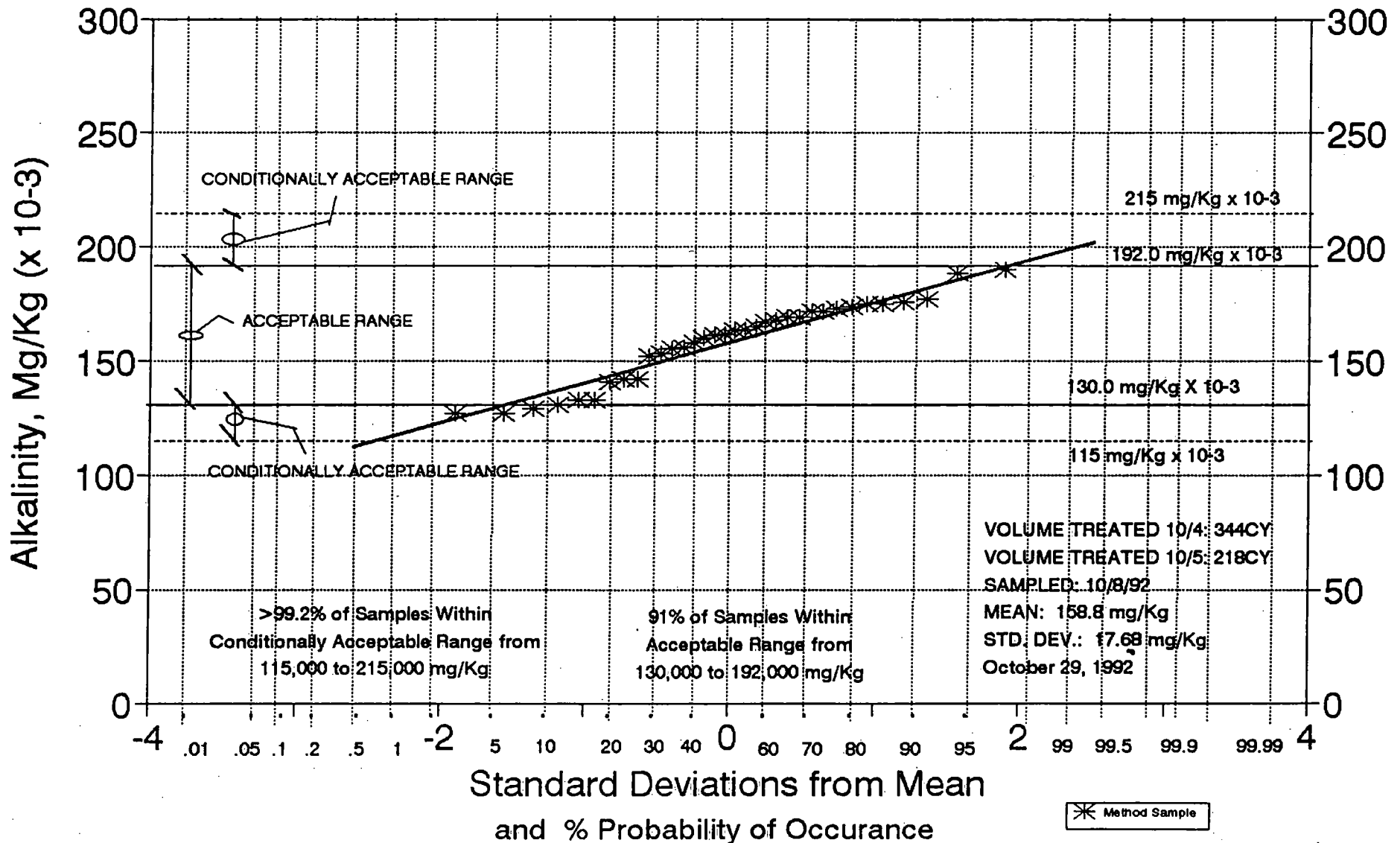


Figure 4

KEYSTONE STEEL & WIRE

Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells Q14, R14, Q15, R15, Q16, and R16: Treated October 5, 1992

Cells Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, R13, K15, L15, M15, N15, O15,
and P15: Treated October 6, 1992

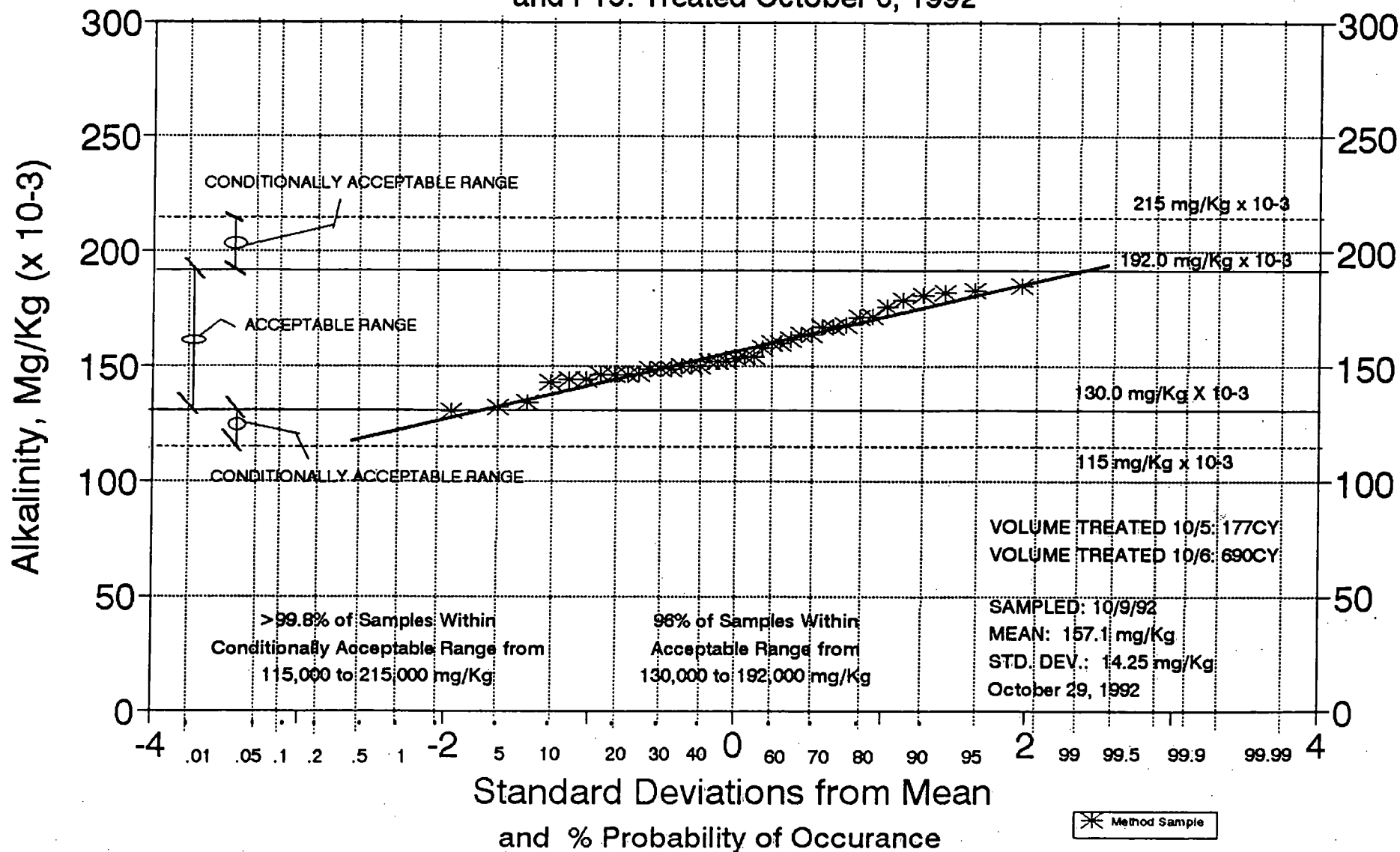


Figure 5

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of
Cells R28, R29, Q30, R30, Q31, and R31: October 13, 1992

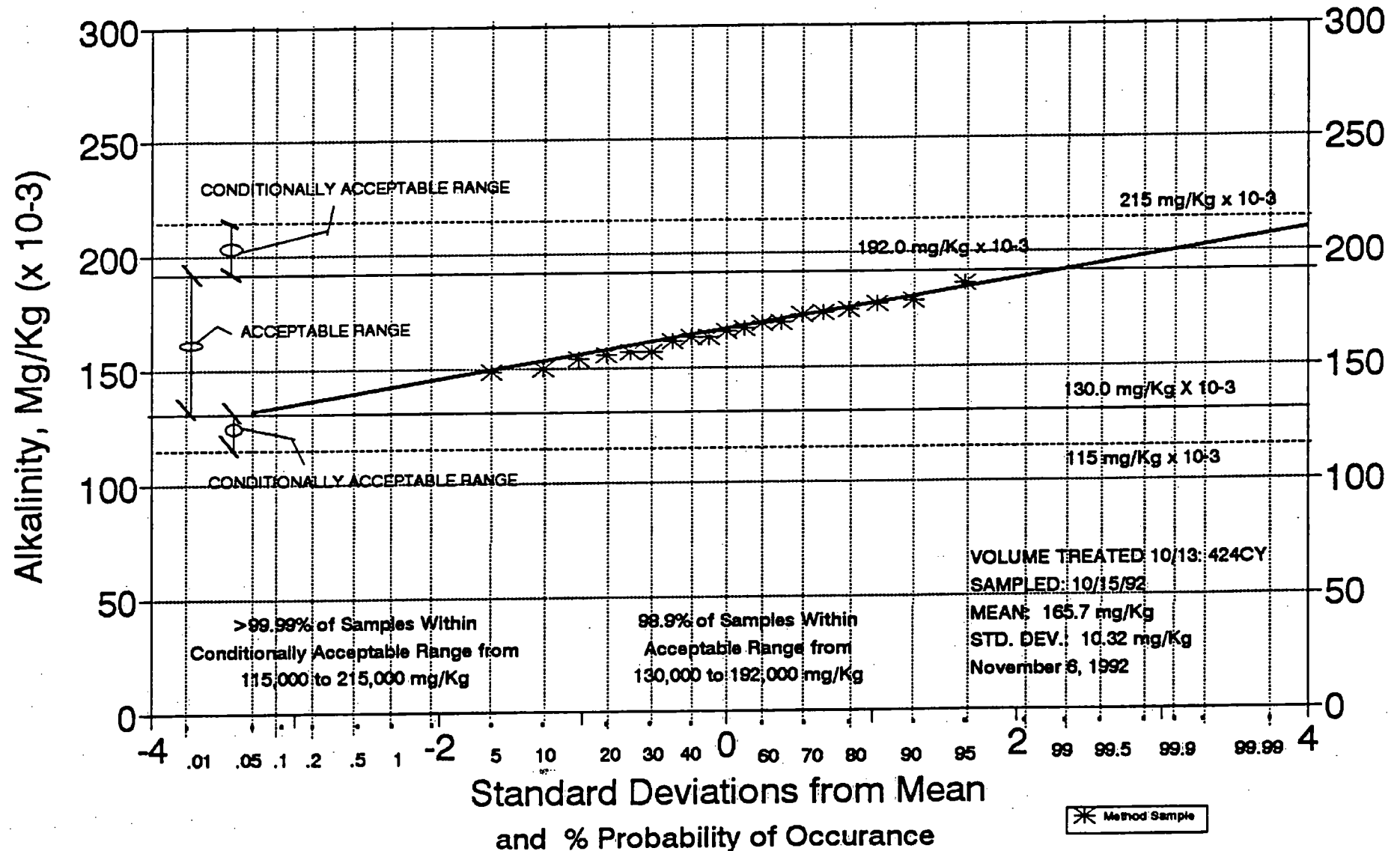


Figure 6
KEYSTONE STEEL & WIRE
 Retention Reservoir Remediation
 Variability in Alkalinity Subsequent to Treatment of
 Cells L30 and M30: October 12, 1992
 Cells N30 and N31: October 9, 1992
 Cells O-30, P-30, O-31, and P-31: October 8, 1992

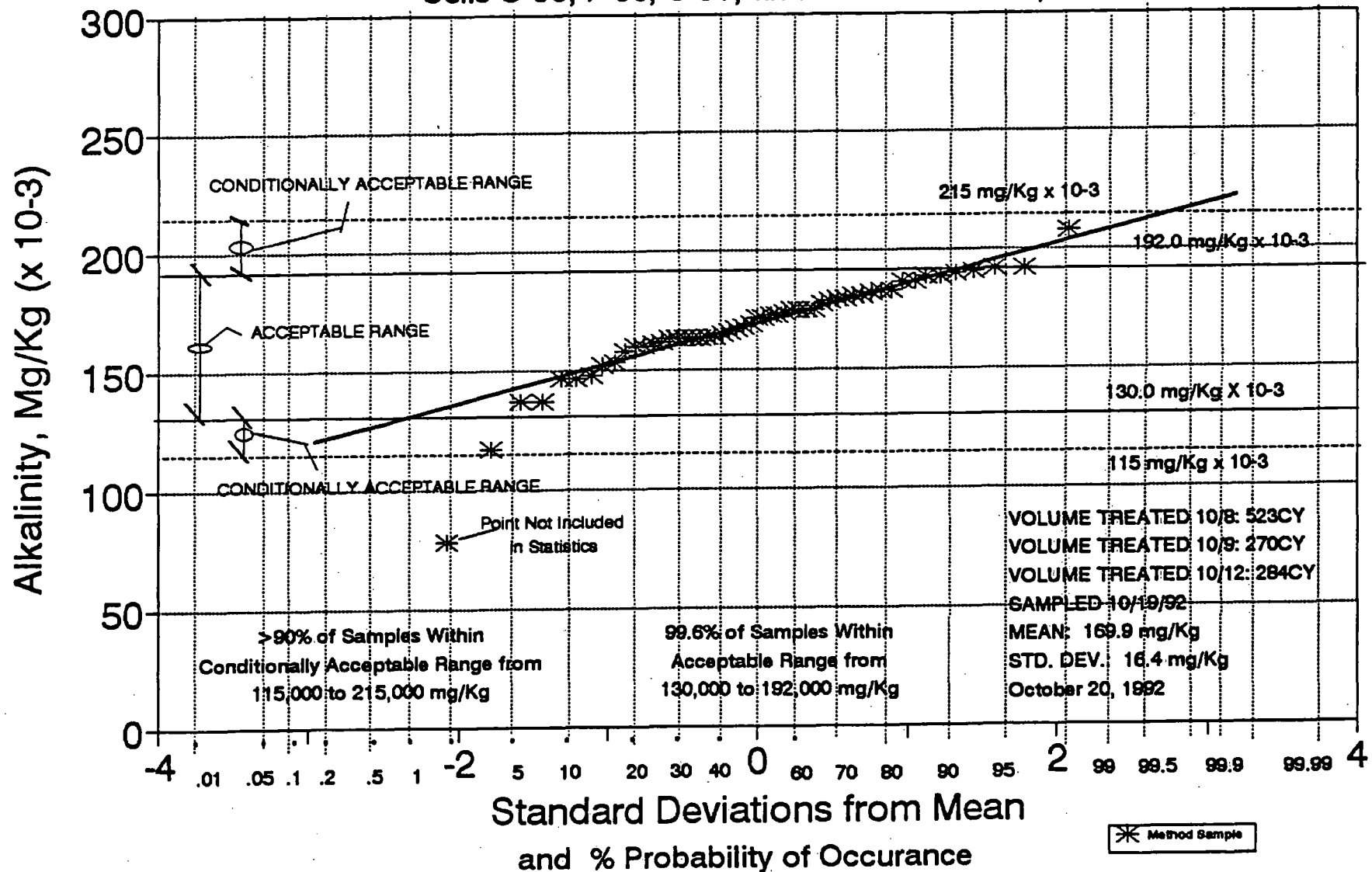


Figure 7

KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of
Cells H29, I29, J29, K29, J30, and K30: October 15, 1992

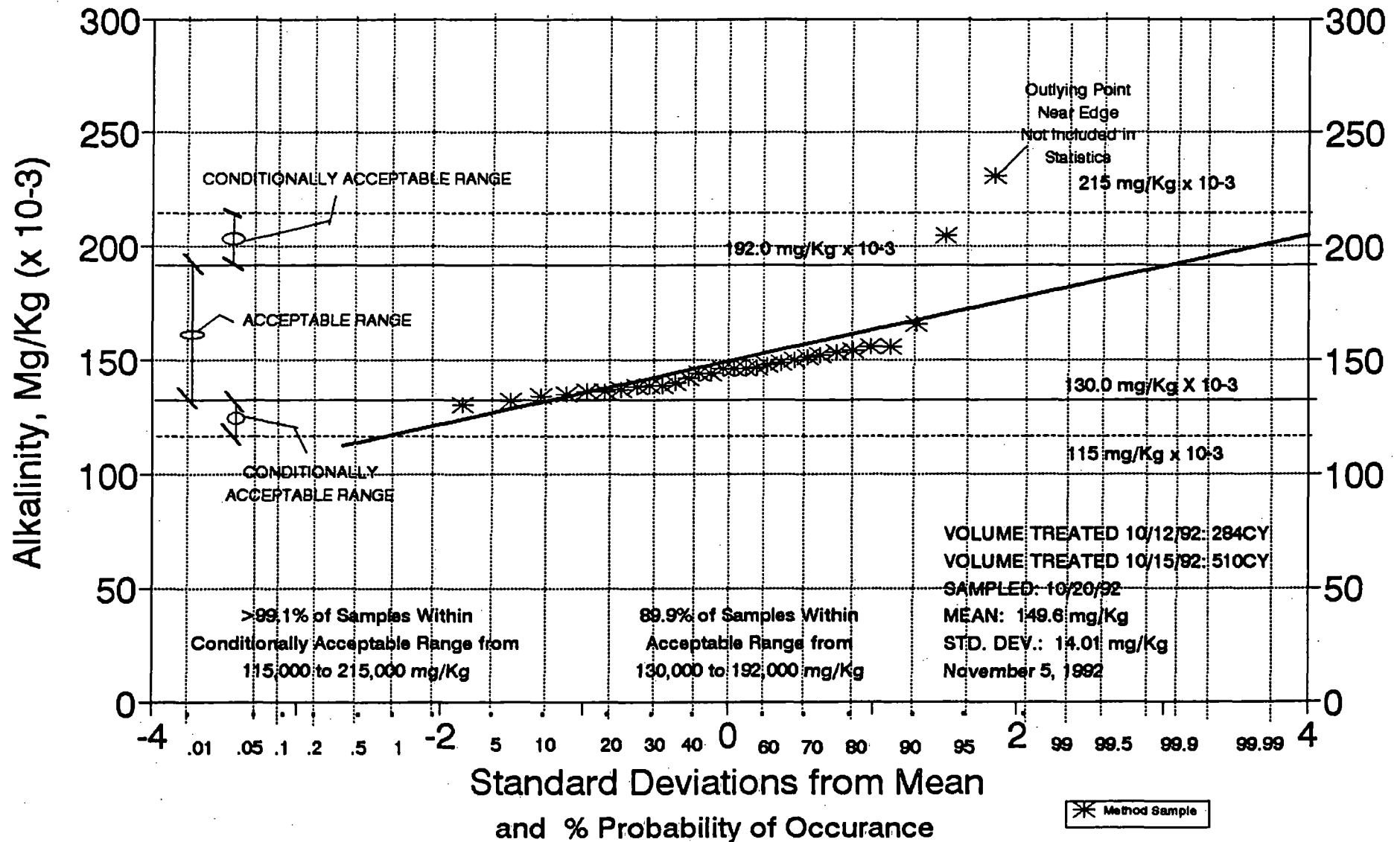


Figure 8

KEYSTONE STEEL & WIRE
Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of
Cells F23, G23, F24, G24, F25, G25, and F26: October 13, 1992

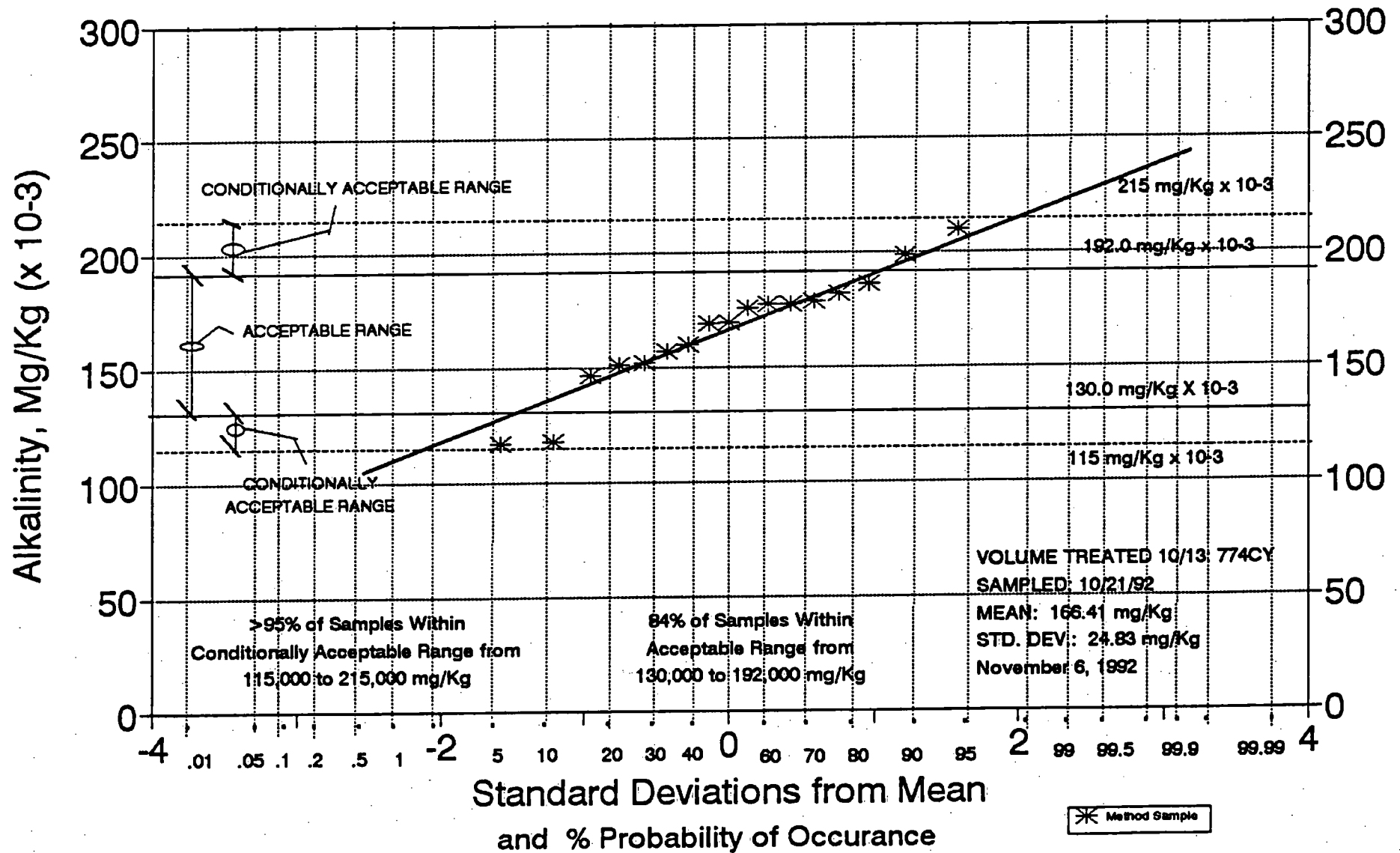


Figure 9

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of

Cells E29, F29, and G29: October 16, 1992

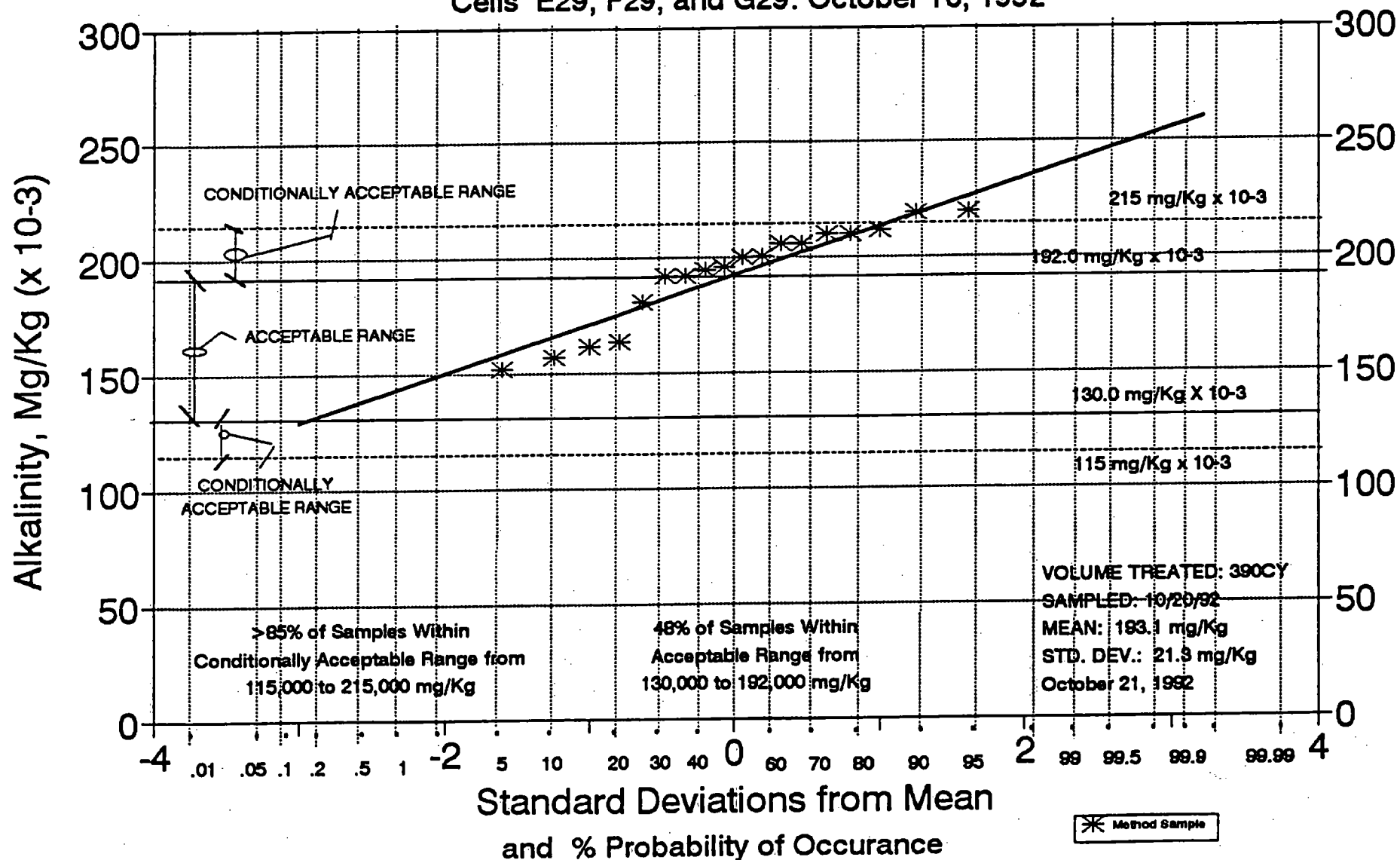


Figure 10

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of
Cells L29, M29, and N29: October 20, 1992

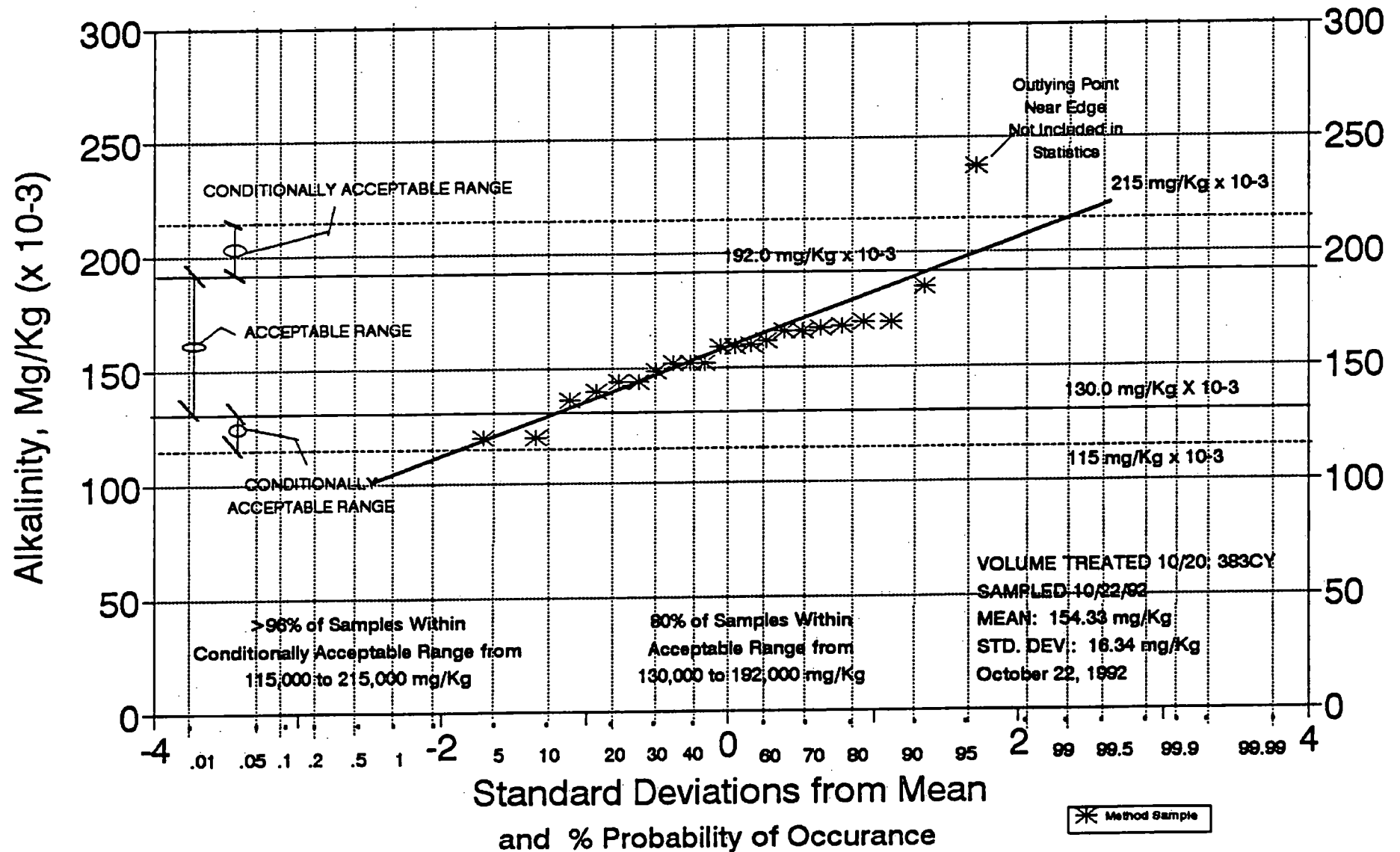


Figure 11

KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of
Cells H28, and I28: October 21, 1992
Cells K30, K31, L31, and M31: October 22, 1992

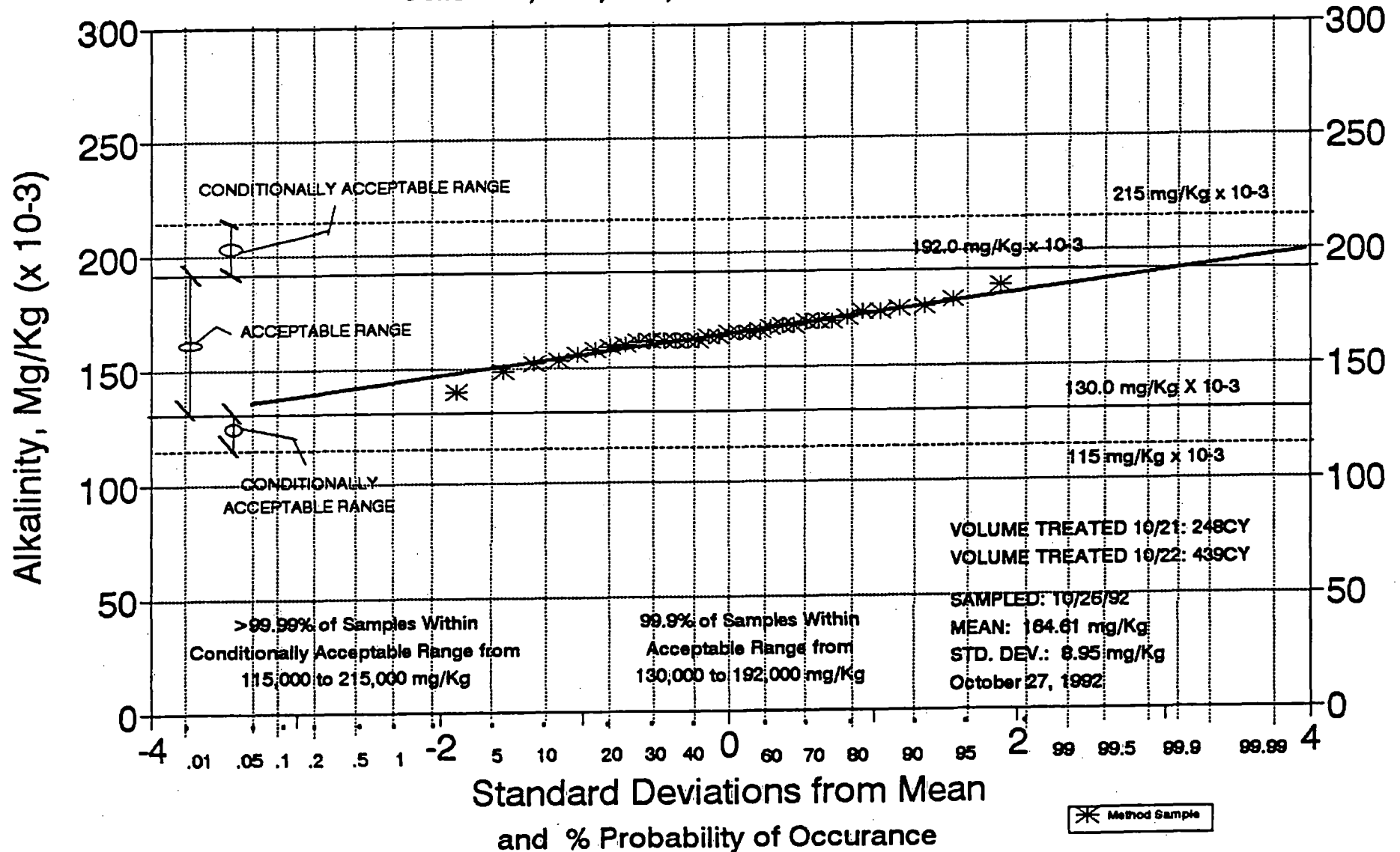


Figure 12

KEYSTONE STEEL & WIRE Retention Reservoir Remediation Variability in Alkalinity Subsequent to Treatment of

Cells H23, and I23: October 21, 1992

Cells H24, and I24: October 22, 1992

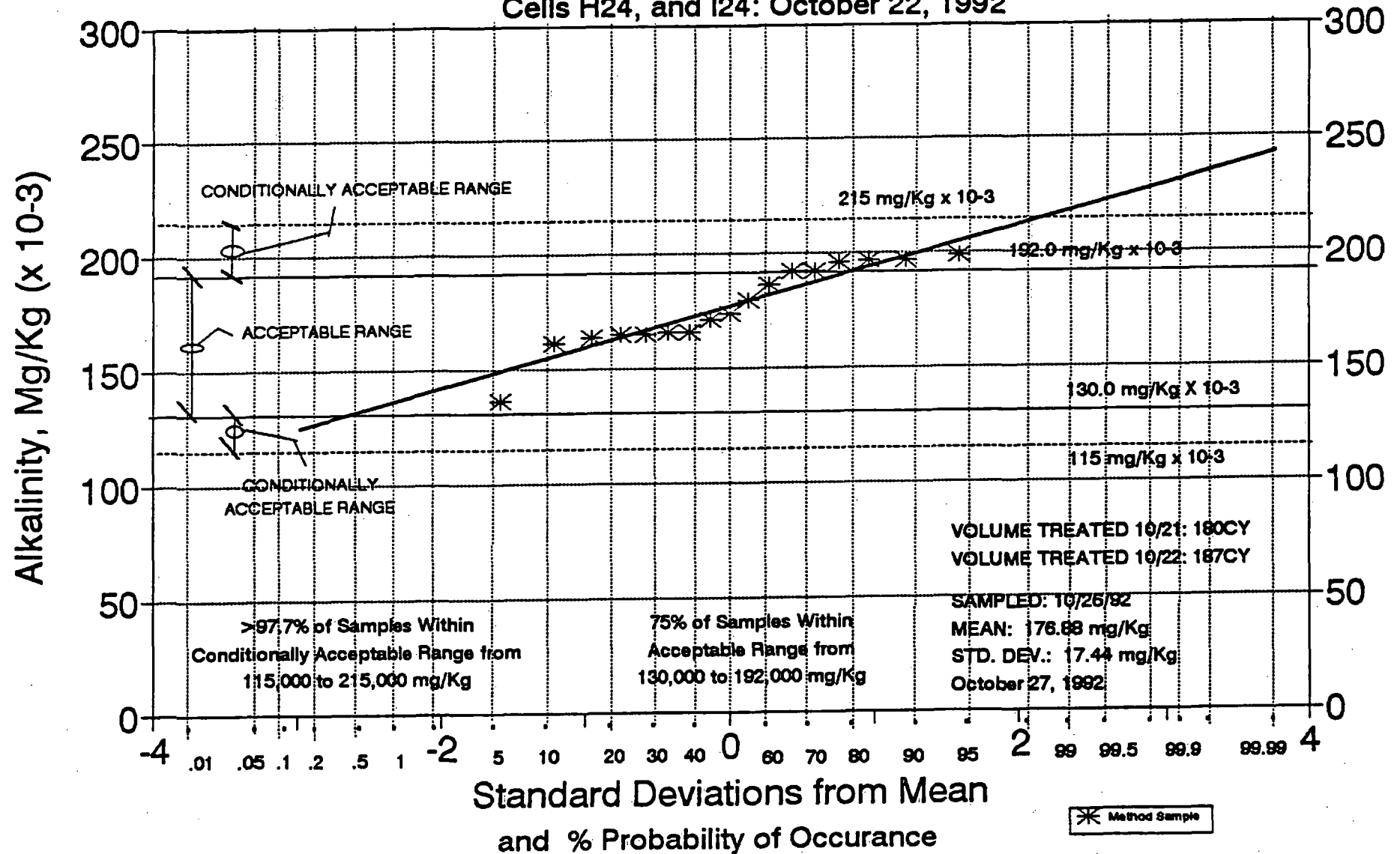


Figure 13

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of Cells K23, L23, K24, and L24: October 23, 1992

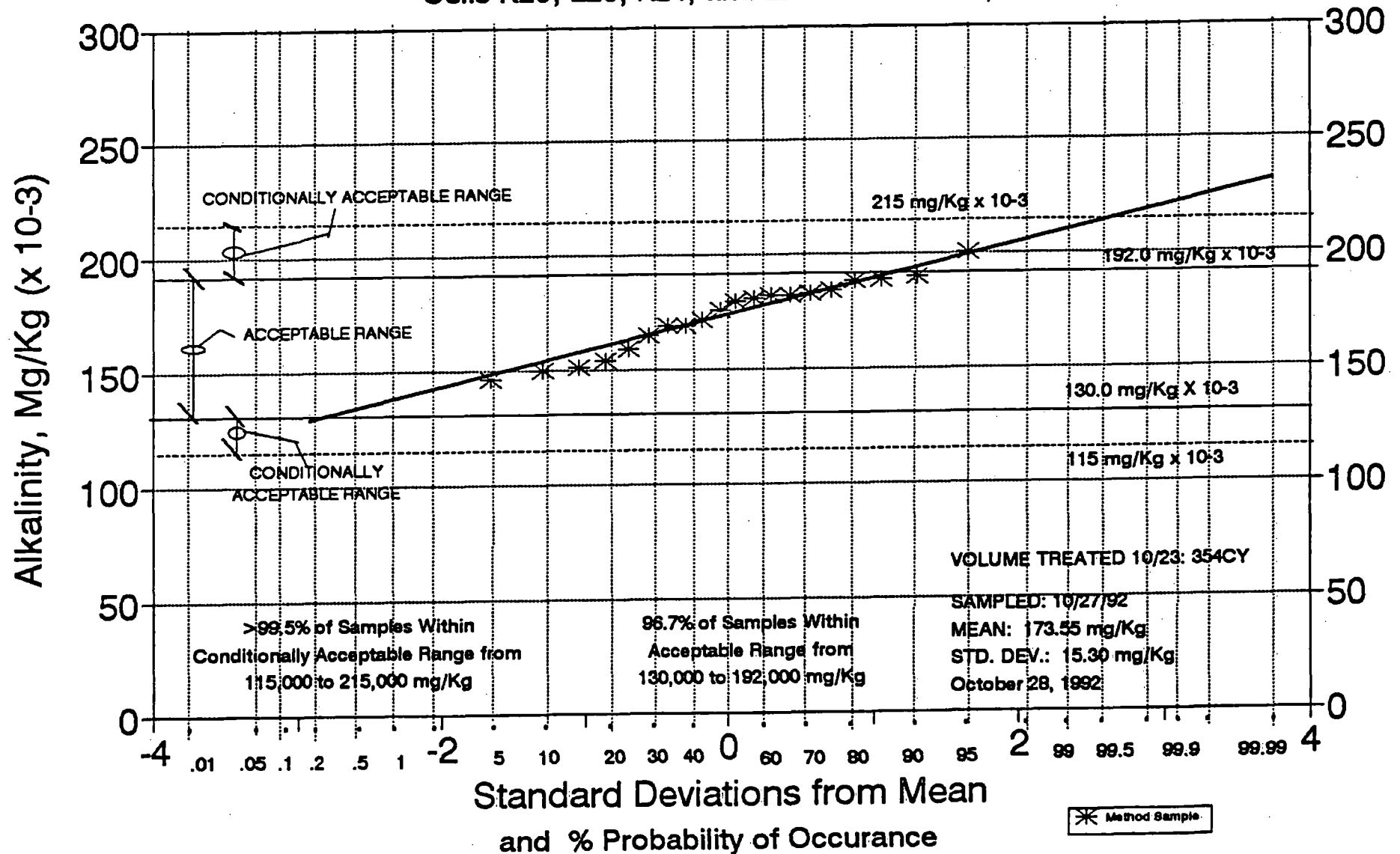


Figure 14

KEYSTONE STEEL & WIRE Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Treatment of
Cells F23, G23, F24, G24, F25, G25, and F26: Treated October 13, 1992
Cells G26, F27, and G27: Treated October 19, 1992

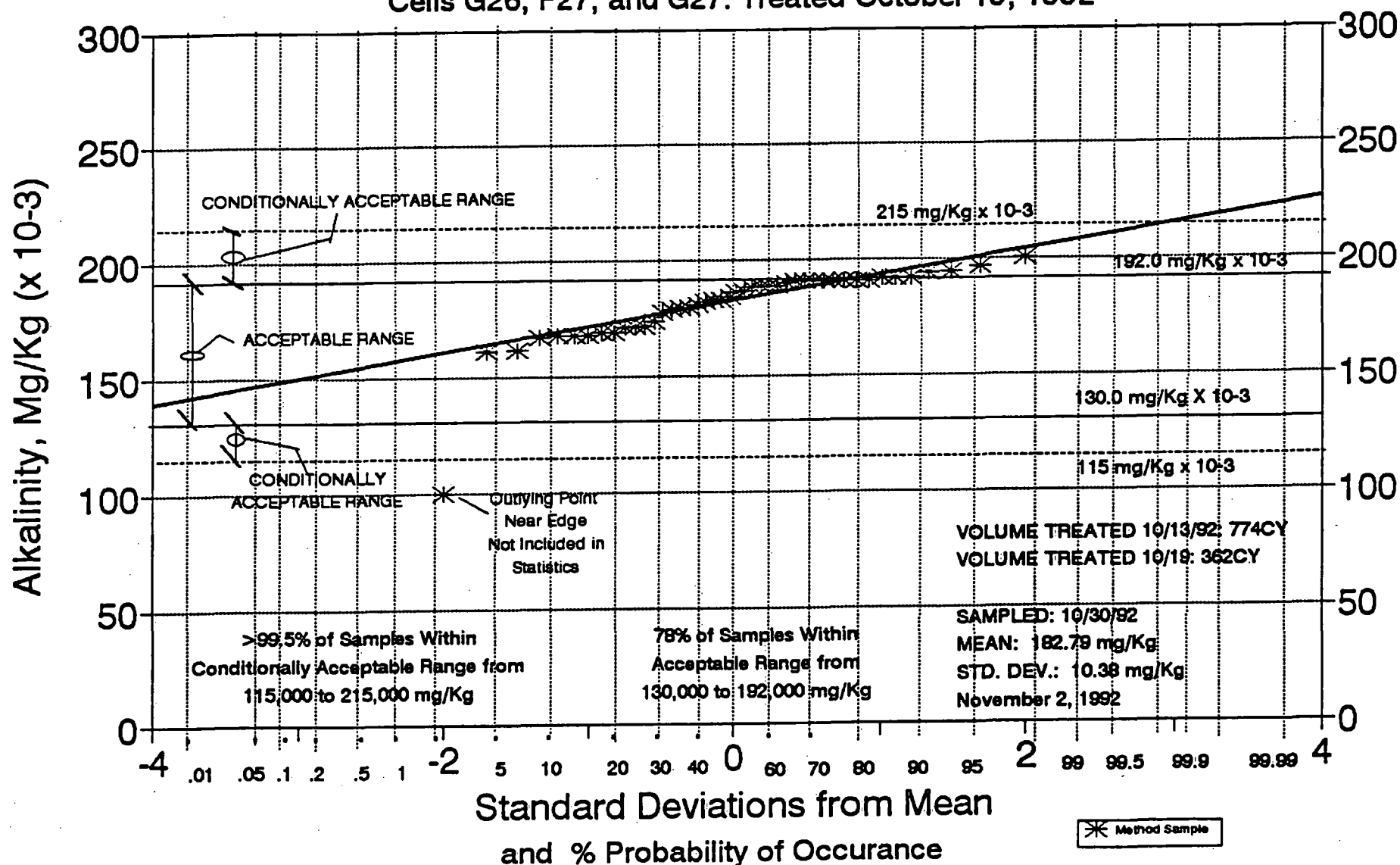


Figure 15
KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of
Cells F-28, G-28, E-29, F-29, and G-29: October 16, 1992
Cells F27 and G27: October 19, 1992
Cells H30 and I30: October 26, 1992

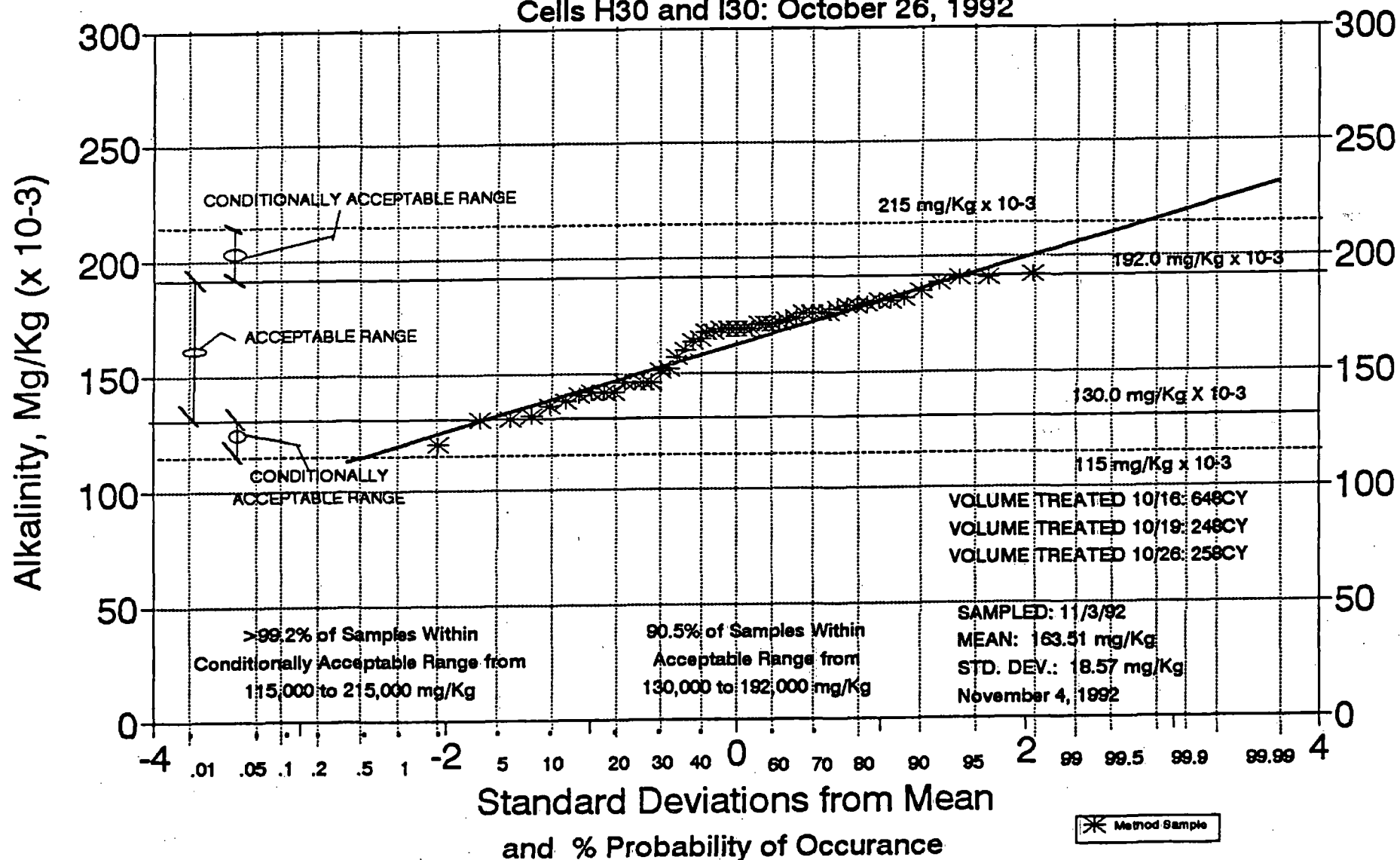
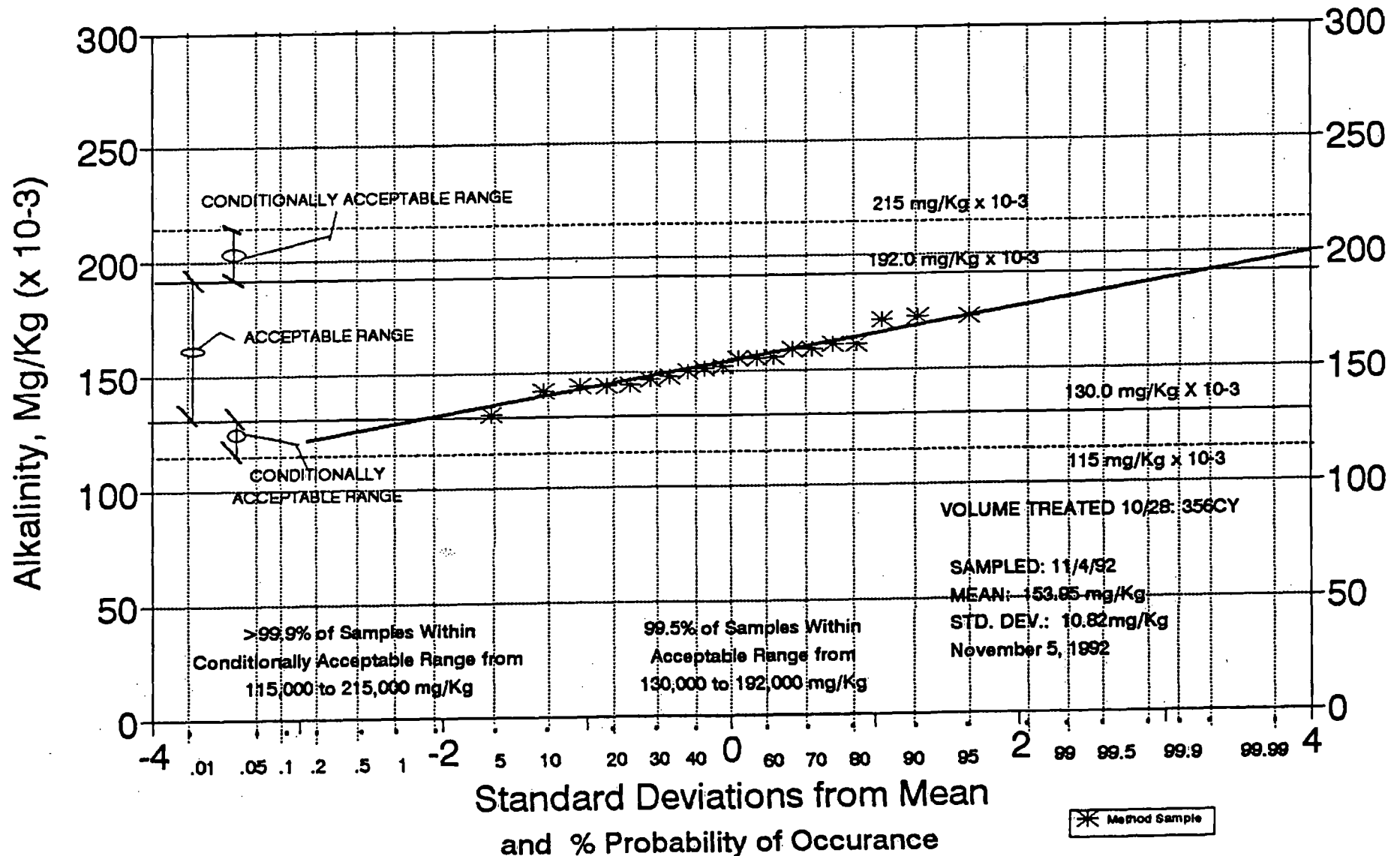


Figure 16

KEYSTONE STEEL & WIRE
Retention Reservoir Remediation
Variability in Alkalinity Subsequent to Treatment of
Cells M-23, N-23, M24, and N-24: October 28, 1992



**Keystone Steel & Wire Company
Bartonville, Illinois**

**Retention Reservoir Remediation
Monthly Status Report**

for

S E P T E M B E R , 1 9 9 2

Prepared by:

***Environmental Resources Management-North Central, Inc.
112 Point West Boulevard, Suite 10
St. Charles, Missouri 63301
ERM Project 92136***

USEPA

C-521-M-6

ERM-North Central, Inc.

Environmental Resources Management

112 Point West Boulevard • Suite 10 • St. Charles, Missouri 63301 • (314) 949-8545

October 15, 1992

Lawrence W. Eastep, P.E.
Manager Permits Section
Division of Land Pollution Control
P.O. Box 19276
Springfield, IL 62794

RE: September Monthly Status Report for Retention Reservoir
Remediation at Keystone Steel and Wire in Bartonville, IL

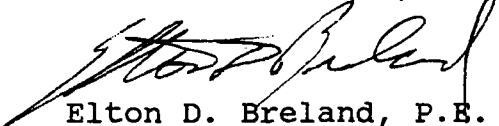
Dear Mr. Eastep:

Enclosed are three copies of the September Monthly Status Report for remediation of the Retention Reservoir located on Keystone's Bartonville plant site.

Please call me at (314)949-8545 if you have any questions concerning the content of this report or need additional information.

Sincerely,

ERM-NORTH CENTRAL, INC.



Elton D. Breland, P.E.
Sr. Project Manager

enclosure

EDB/rsd

RECEIVED

OCT 16 1992

IEPA-DLPC

**RETENTION RESERVOIR REMEDIATION
MONTHLY STATUS REPORT
SEPTEMBER, 1992**

INTRODUCTION

Performance trials during the first three weeks of August and the attempts at "best treatment" during the last week in August revealed that additional quality control measures would be necessary to ensure adequate treatment. In order to allow time to properly evaluate existing control measures and to develop necessary modifications to these procedures, "best treatment" activities were stopped on September 4. During the week of September 7, modifications to existing treatment procedures and additional quality control measures were developed and agreed to by Keystone, ITEX and ERM.

Two remix trials were conducted during the week of September 14, whereby two previously treated areas were remixing using improved mixing/blending techniques for the purpose of reducing the variability in additive dosage levels. In addition, two trial treatment runs were attempted during the week of September 21, in which two previously untreated areas were subjected to the revised quality control, mixing and blending procedures. The results of these four performance trials indicated that acceptable treatment is achieved with implementation of the revised procedures.

On September 29, ITEX was given approval by Keystone to proceed with treatment operations. All revised procedures were implemented by ITEX and "best treatment" activities began on September 30th.

TREATMENT VOLUMES

The locations of all cells treated from the beginning of the project through September 30, 1992, are shown on the drawing entitled "Cell Treatment Daily Status", dated October 14, 1992, and included as Attachment A. A total of 135 cells have been treated during performance trial and "best treatment" activities by ITEX through September 4, representing a total volume of 11,150 yds³ or about 35% of the total materials present in the Retention Reservoir. All of this material will be retreated using the revised procedures developed during September to comply

with treatment requirements discussed in the subsequent "Analytical Results" section of this report. Approximately 500 yds³ of acceptable treated material was generated during the two trial treatment runs performed during the week of September 21.

ANALYTICAL RESULTS

The evolutionary process in developing a proper chemical dosage range, as discussed in the August Monthly Status Report, came to fruition after the analysis of the data of the treated material generated up through September 4, 1992. A plot of TCLP lead results versus alkalinity for all data from field samples generated from the beginning of the project up through September 4 is given as Figure 1, Attachment B. This data confirms (for the first time) that there is both upper and lower alkalinity dosage limits beyond which unacceptable TCLP lead levels may result. These limitations prompted Keystone's action to stop treatment activities and work with ITEX and ERM to develop quality control, mixing and blending measures to comply with the alkalinity range limits.

The TCLP lead data in Figure 1, Attachment B, suggests that within an alkalinity range from 132,000 mg/Kg to 188,000 mg/Kg, 98% to 100% of all samples analyzed are expected to have TCLP lead levels < the delisting requirement of 0.218 mg/l. As alkalinity increases above or decreases below this range, the probability of the appearance of lead levels > the delisting requirement of 0.218 mg/l increases. Several alkalinity ranges are indicated on Figure 1 within which the lowest percent of probability for TCLP lead values < 0.218 mg/l is indicated, which should appear at the extremes of the respective range. As an example, the percent probability of the appearance of TCLP lead levels below 0.218 mg/l in samples with alkalinities between 130,000 and 192,000 varies from 95% at the extreme values of 130,000 and 192,000 mg/Kg, up to approximately 100% at the center of the range. The TCLP lead values plotted in Figure 1 are based on analytical results obtained two (2) to three (3) days after treatment. As chemical reactions become more complete with time, the magnitude of high lead levels is expected to decrease. Consequently, the probability that TCLP lead levels are below the delisting requirement of 0.218 mg/l should increase.

Based on the results in Figure 1, two acceptable alkalinity ranges were selected to serve as guidelines to indicate adequate treatment. These ranges are schematically presented in Figure 2, Attachment B. The preferred range with alkalinities from 130,000 to 192,000 mg/Kg corresponds to the 95% probability of passing range indicated in Figure 1. Samples with alkalinities within the preferred range are accepted as indication of adequate treatment with no other considerations. The broader range with alkalinities from 115,000 to 215,000 mg/Kg corresponds to the 70% probability of passing range indicated in Figure 1. Samples with alkalinities

between 115,000 and 130,000 mg/Kg and between 192,000 and 215,000 mg/Kg are only considered conditionally acceptable as an indication of adequate treatment. Since delisting requirements do not include alkalinity but do include TCLP lead, samples within the two conditional ranges (shaded areas in Figure 2) will be analyzed for TCLP lead and will be accepted as an indication of adequate treatment if the lead results are < the delisting requirement of 0.218 mg/l.

As a convenient reference, Table 1, Attachment B, summarizes the distribution of high TCLP lead levels experienced from the data presented in Figure 1 within the conditional and preferred alkalinity ranges.

Under the revised treatment requirements (intended for the remainder of the project), alkalinity will still be used as an indicator parameter supported by TCLP lead analytical results as follows:

Target Mean Alkalinity: For Treatment	162,000 mg/Kg
Acceptable Alkalinity Range: (Treatment Acceptable)	130,000 to 192,000 mg/Kg
Conditionally Acceptable Alkalinity Range: (Treatment Acceptable)	115,000 to 215,000 mg/Kg; TCLP lead <0.218 mg/l
Unacceptable Alkalinity Range: (Retreatment Required)	<115,000 mg/Kg; >215,000 mg/Kg

A statistical plot of the alkalinity results from samples taken from the materials treated in one of the trial runs during the week of September 21 is included as Figure 3, Attachment B, as an example of treatment effectiveness that can be achieved under ideal conditions. To allow for normal variations in the strength of the lime/cement additive, characteristics of the sediment materials, accuracy of analytical results, and parameters affecting mixing/blending, the normal treatment goal is for 90% of all actual sample results to be within the acceptable alkalinity range. This will minimize the number of samples which fall in the conditional alkalinity range and which, therefore, must be subjected to TCLP lead analysis.

TREATMENT QUALITY CONTROL

Experience gained from performance trials has revealed that several quality control measures and treatment modifications are necessary to achieve adequate treatment. These necessary measures which have been implemented are as follows:

1. Accurate sediment depths, bottom elevations and volume calculations are necessary on an ongoing basis just prior to treatment.
2. Areas containing up to 500 yds³ of sediment material must be treated as a batch to minimize variability in chemical dosage levels, and partially treated edge areas.
3. Areas containing up to 500 yds³ must be premixed prior to treatment to assure uniformity of sediment characteristics.
4. Chemical analysis of premixed sediments is necessary to calculate accurate chemical dosage requirements.
5. Safeguards in preparation of 50/50 cement/lime additive blend must include:
 - Preparation of additive in limited batches of 2000# by Ready-Mix Plant to achieve adequate blending.
 - Obtain three-to-five samples of additive per truck and analyze to check lime content.
6. Additive feed rate variability must be minimized by:
 - Closely monitoring and controlling pneumatic feed system pressure.
 - Constantly recording change in truck weight with time in an attempt to minimize variation in feed rate from truck.
7. After chemical addition to sediments, extensive blending and lateral mixing within a relatively large area (containing <500 yds³) is necessary to minimize variation in chemical dosage levels.

SCHEDULE

The development of more restrictive treatment requirements made it necessary to retreat all materials treated up through September 4, 1992. In addition, these requirements make it necessary to devote extensive efforts to blending and lateral mixing in order to minimize the variability in chemical dosage levels. It appears that one team consisting of a mixing/blending head and one backhoe is capable of processing 500 yds³ per day under a two-shift operation. Since two teams will be employed, the expected treatment production for the remainder of the project is 1000 yds³ per day. If this production rate can be achieved, the treatment phase of the Retention Reservoir Remediation project should be completed during the 1992 Calendar Year, weather permitting.

SUMMARY

The guideline requirements to achieve adequate treatment were finalized during the month of September, 1992, and necessary controls and operating procedures to achieve adequate treatment have been developed and implemented. Two trial runs during the month of September and subsequent best treatment activities in the first part of October have demonstrated that proper treatment is achievable with a potential production rate of 1000 yds³ per day.

EB/rsd
10/15/92

A T T A C H M E N T A

Drawing Showing Location
of
Cells Treated

A T T A C H M E N T B

Analytical Reports
and
Plots

TCIP Lead, m/11

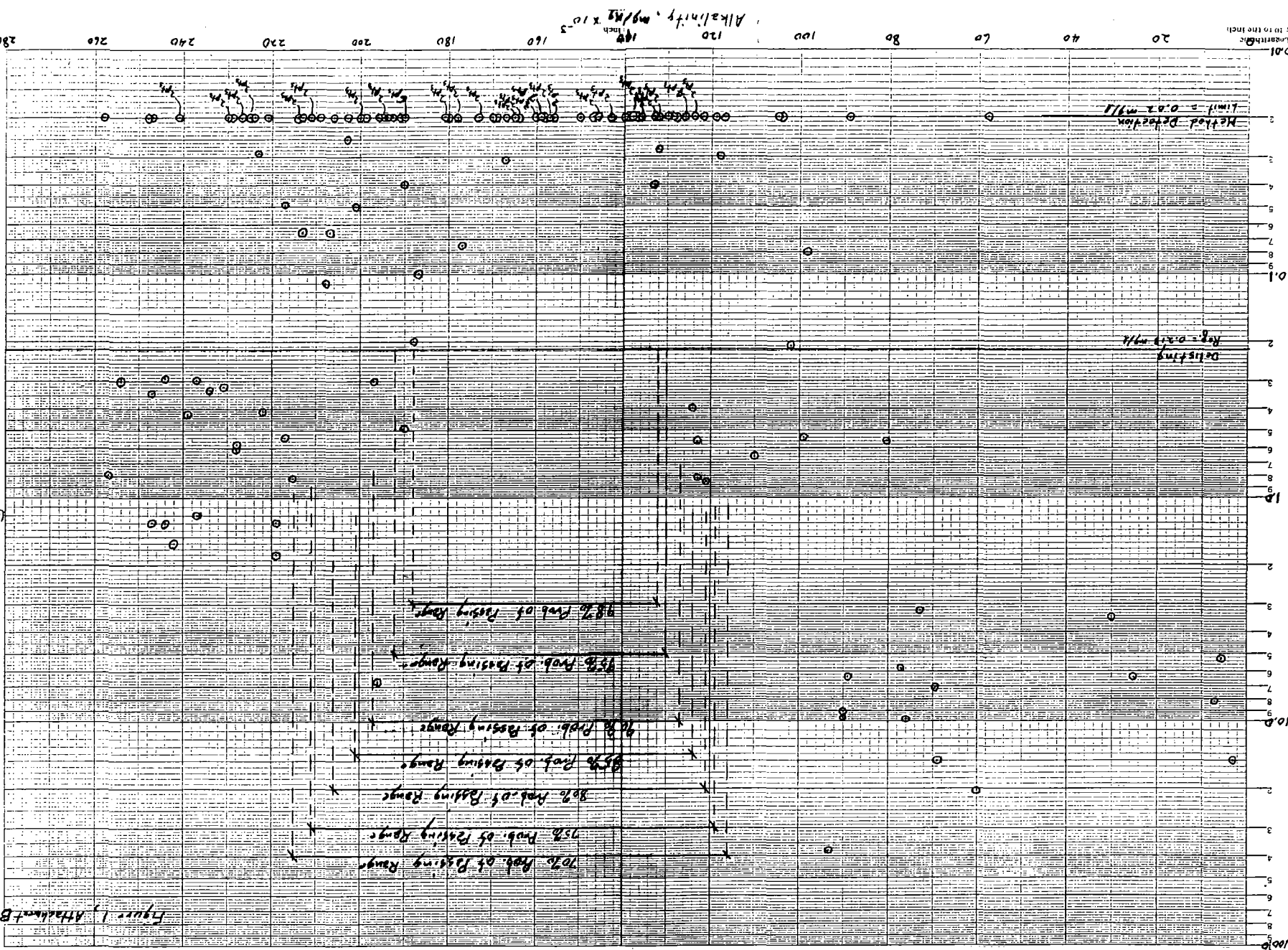


Figure 1, Attachment B

T A B L E 1
A T T A C H M E N T B

**SUMMARY OF ALKALINITY RANGES
VS.
TCLP RESULTS**

(Delisting Criteria for TCLP Lead at 0.218 mg/L)

Alkalinity Range (mg/kg)	Number of TCLP Results	Number Over Delisting Criteria
Background to 115,000	23	17
115,000 to 130,000	18	4
130,000 to 192,000	63	1*
192,000 to 215,000	25	4
215,000 to 289,000	37	20

*Data point suspect

FIGURE 2
ATTACHMENT B

ESTABLISHED ALKALINITY OPERATING RANGE
(mg/kg)

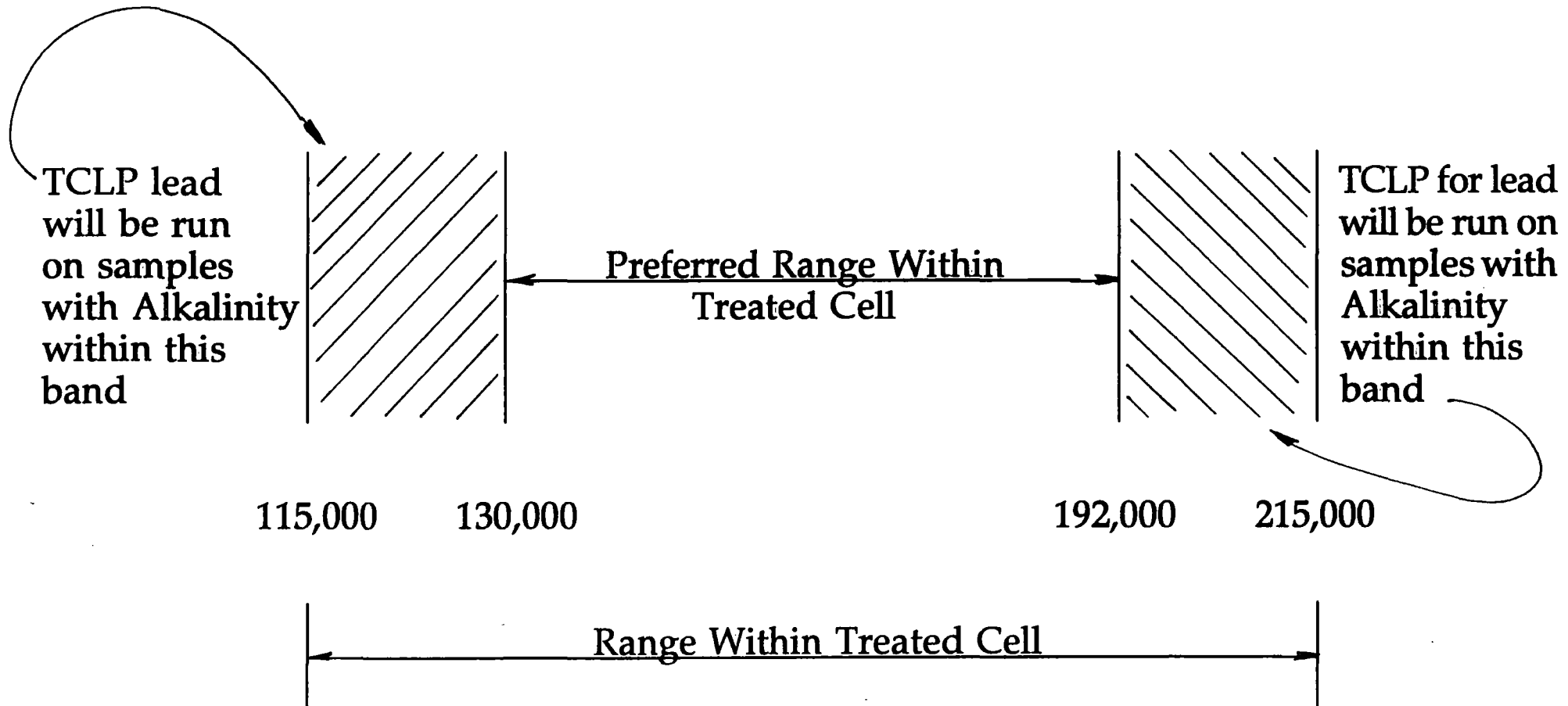
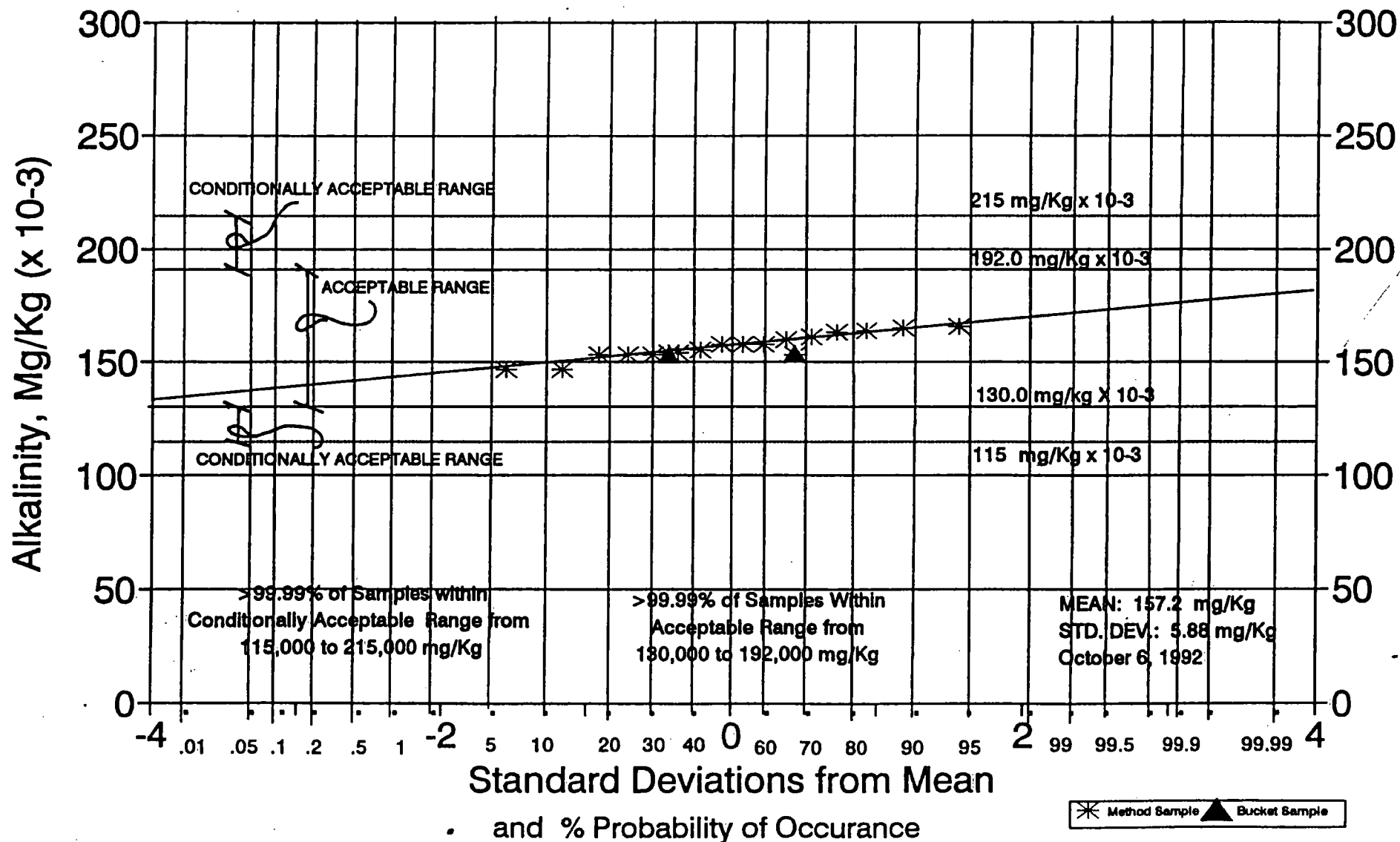
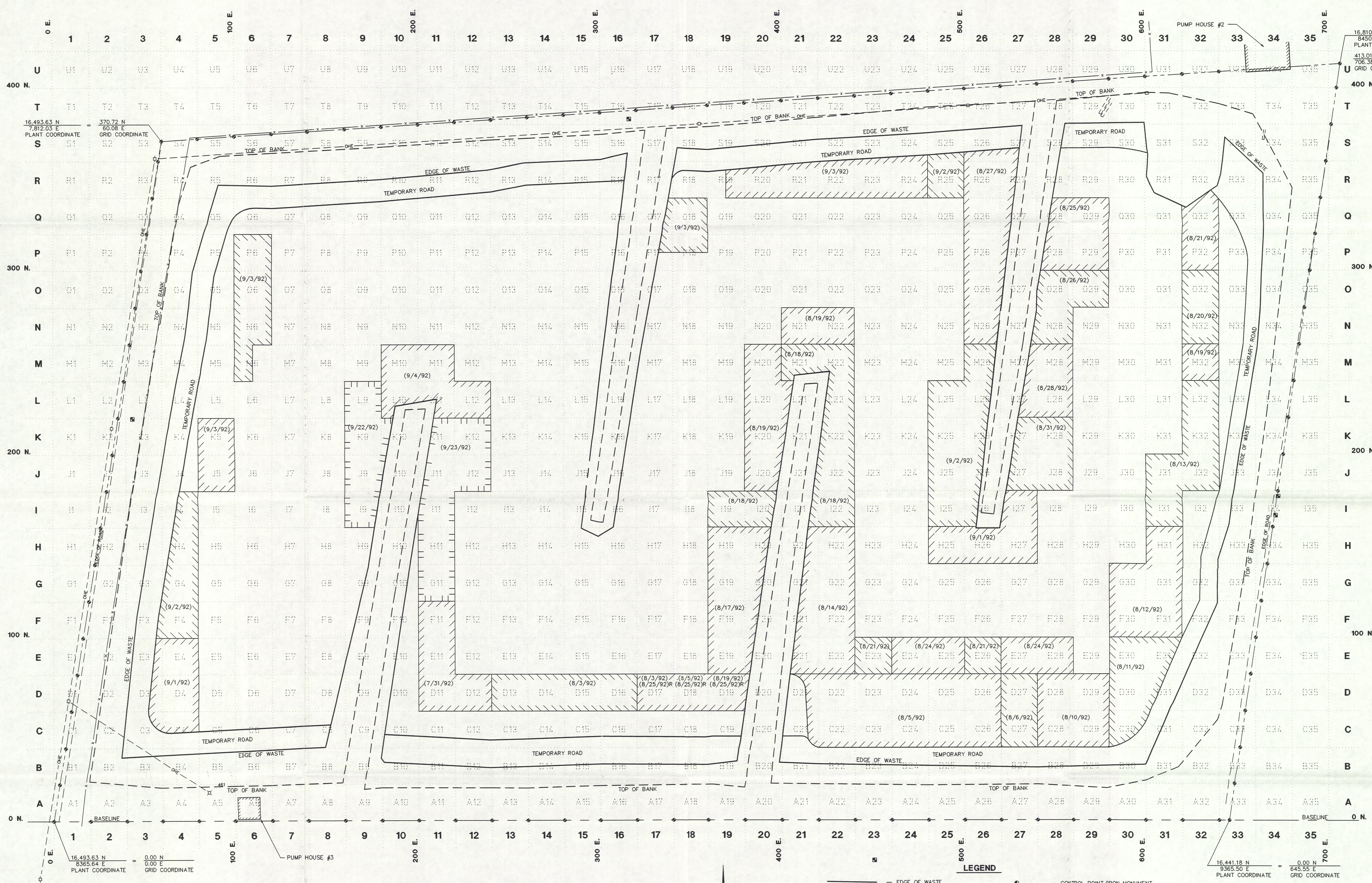


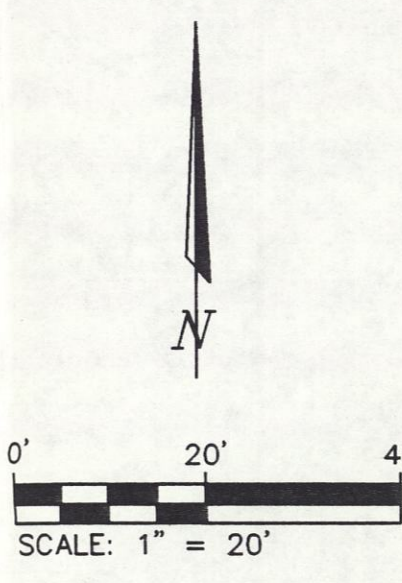
FIGURE 3
ATTACHMENT B
KEYSTONE STEEL & WIRE
Retention Reservoir Remediation

Variability in Alkalinity Subsequent to Initial Treatment of
Cells I9, J9, K9, and L9: September 24, 1992





SITE PLAN
CELL TREATMENT STATUS



- LEGEND**
- EDGE OF WASTE
 - - - TOP OF BANK
 - - - PERIMETER LINE
 - - - FENCE LINE
 - - - OVERHEAD ELECTRIC
 - ▨ MATERIAL THAT MUST BE RE-MIXED
 - MATERIAL MEETING TREATMENT SPECIFICATIONS
 - CONTROL POINT/IRON MONUMENT
 - MONITOR WELL
 - ⊗ LIGHT POLE
 - ⊕ POWER POLE
 - (8/1/92) DATE TREATED
 - (8/25/92)R DATE RETREATED

KEYSTONE STEEL AND WIRE CO. BARTONVILLE, ILLINOIS		CELL TREATMENT DAILY STATUS		SHEET 1 OF 1
ERMA Environmental Resources Management 3425 North Dries Lane Deerfield, Illinois 60015 Ph. (708) 940-7200		CLARK ENGINEERS MW, INC. 102 Wilmont Rd., Suite 300 Peoria, Illinois 61604 Ph. (309) 685-8464		SURVEY MM DESIGN DES CHECKED DFH DATE 10-14-92 REVISD JOB NO. 5202-53

5202-53 SEPTEMBER 14-20 E 012